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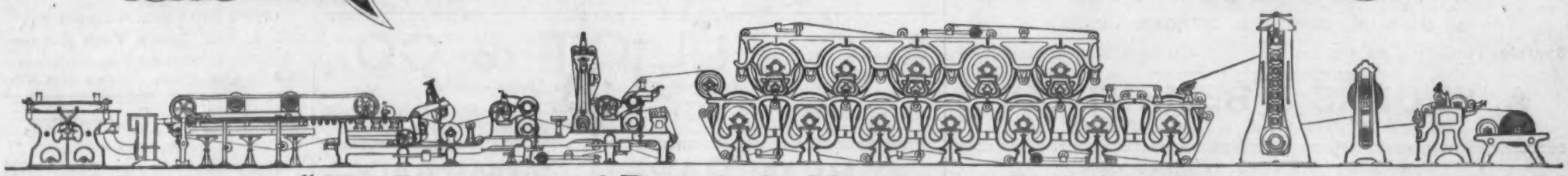


"The Consumption of Paper is the Measure of a People's Culture."

VOLUME XXIII.—NO. 42. NEW YORK, OCTOBER 20, 1894. WHOLE NUMBER 1068.

Trade Topics.

Oil Fuel.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

By W. H. Weston.

Although the introduction of oil as fuel for the generation of steam is rather slow, there seems to be no reason why it cannot be adopted, at least in certain places, to good advantage. There is no expensive special construction of boilers necessary, and by slight changes in the furnaces of the present style and form of boilers, they can be adapted to the use of liquid fuel.

It is hardly probable that petroleum is to become the principal fuel for steam-making at any time in the future, yet in some parts of the world, both in land and in marine power, it is probable that it will be used with economy and will give advantages in other ways.

As to the storage of oil for fuel, there are certain places where it can be handled very much easier than an equivalent amount of coal. Where there is not sufficient room for placing more than a few tons of coal at a time, oil tanks of considerable capacity could be located at a height above the boiler room floor, where the coal could not be stowed, and in this way a much larger supply of fuel could be kept at a time. On shipboard oil tanks can be placed in parts of the hull which cannot be utilized for the storage of coal, thus saving much valuable space for other purposes.

The weight of petroleum fuel per unit of power being less than that of coal, the total weight of fuel to be taken for a given power and time will be less than that of coal. Taking the average of practical examples where petroleum has been employed for steam making, it is evident that under ordinary working conditions one pound of petroleum is equivalent in available heat units or actual steam generating to from 1.6 to 1.8 pounds of coal. Consequently there is considerable saving in the amount of weight to be transported or to be stored.

Of course the weight of the tanks required to hold the oil is to be added to that of the oil itself, but this is only a slight matter in proportion to the weight of the oil. It counterbalances only a small part of the six or eight tenths extra weight of coal.

As to the cost of petroleum for fuel, it, of course, must vary greatly according to locality. So far as the present supply of oil is concerned, with the present prices of coal, the probability is that coal will be the cheaper fuel of the two in a large part of the country or the world; but in many localities where oil fields are in closer proximity than coal mines to the seat of power the oil fuel will be the cheapest. Taking petroleum as sold at 6.5 pounds to a gallon, it may be assumed, as a close average, that 200 gallons are equivalent in steam generating under ordinary conditions to 1 ton of coal, and at a place where the oil can be bought at 2 cents a gallon it would be cheaper than coal if the latter cost more than $1 a ton; and in parts of the world where the cost of oil is less than 2 cents a gallon and the cost of coal is much above $4 per ton, the equipment of a steam plant to use oil is a profitable proceeding.

The prominent petroleum fields of this country and of Europe are well known, and possibly there may be others of equal capacity to any now known; they will be found and developed in the future. As to the permanence of the supply from given fields, it is evident that it will be a sure thing for a good many years to come, and as new fields may be brought into operation it is likely that the supply will continue.

With a proper arrangement of burner details it is possible to secure almost complete combustion of the oil, so that there will be little smoke comparatively, and a large part of the heat units is transformed to work. In regard to the excessive amounts of smoke produced, and the clogging of tubes with soot in some of the experiments heretofore tried with petroleum, it undoubtedly was due to want of the right form of details of burners and to the improper proportion of air supplied to the flame, or to the crowding of too much work onto the given burners. In a carefully constructed burner, with the quantity of oil and the quantity of air carefully regulated, combustion is practically perfect.

One of the important elements in the use of oil fuel is the ease with which it can be handled and regulated in a boiler furnace, and the consequent reduced amount of attendance required, while there being no ashes to be handled and carted, another saving of more or less account, according to the size of the plant, results. In places where the power used varies from time to time, the production of steam by oil fuel is a matter of easy and quick regulation, as the turning of one or two valves will change the heat in the furnace from nothing to the full capacity of the boiler. This is a matter of very much importance in many instances in stationary power, as well as in that used for marine or railway transportation.

It is not likely that the use of oil fuel will necessitate any change in the construction of chimneys for the adaptation of this fuel. In all probability the present style of boiler tubes will be found all right for the use of liquid fuel, unless some change in the furnace end should be necessitated to prevent burning out. There is no necessity for any change in the form or plan of boiler details as now in general use. The change required is in the furnace, in the way of linings and a bridge and the introduction of the burners. The fire-brick bridge or deflecting plate is necessary in an inside fire box to prevent the flame from the burners striking directly onto the tube sheet and the tube ends. A lining of similar substance on any sheet of the furnace or the boiler that this flame would strike directly upon is also necessary.

Either an air or a steam blast can be used through the burners to spray the oil, but the air blast is preferable, because a more perfect combustion can be had with it under varying conditions, and although the amount of oil used through a burner may vary, complete combustion can be secured at all times, whether the quantity of oil is large or small, by careful regulation of the air supply. The burners can be placed either on a level with the grates or in a plate put over the door openings. Probably the best detail of burner where an air blast is used is one so formed that the oil has a passage to a sort of conical nozzle with an air passage within it, so that a cylindrical film of air will meet the oil on the inside, and an air passage outside of that containing the oil will form a film of air outside of the jet of oil. All three of the passages should terminate together at the end of the burner and thus envelop the oil with air on all sides as it issues from the burner. The air blast can readily be supplied by a fan.

Right of Set-Off.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

If A owes B $10 and B owes A a like amount, each has a right to set his claim against that of the other. So simple a statement needs no explanation; but, with the spread of commerce, complications arise out of the application of this principle of set-off, so intricate that litigation thereon has in the past hundred years, in thousands of instances been carried to the highest courts of the land. What is plain common sense as to the rights of A and B above referred to, grows into a problem requiring for its solution the severest rules of logic by the greatest jurists, when the transaction embraces the dealings of agents for and with principals, and between corporations, trusts, &c.

A correct understanding of the principles upon which the leading cases have been decided and so established that they must continue to rule in these matters would save the tradesmen much trouble and expense in bringing or defending actions, which in the light of the decisions should not have been attempted by the plaintiff or contested by the defendant. It is to some of these conditions that the writer desires to call the attention of readers.

The old rule was that strict mutuality was necessary, but with the course of time greater latitude has been given to the interpretation of the word, the old common law rule being first enlarged by courts of equity, and these departures in turn being embraced in statutes. To have constituted mutuality the debt must have not only been due to and from the same persons, but in the same right or capacity. So where a party owing for some former work had other goods being made up at the time of his failure his assignee was held to be entitled to possession of the latter upon payment of the work thereon, without first satisfying an old bill; but more recent decisions lead us to assume that such would not now be held to be the rule, as the court in Massachusetts has said that all mutual demands subsisting at the time of insolvency were to be liquidated and balanced. The assignee takes a bankrupt's property in the same condition and subject to the same burdens as the bankrupt himself held it.

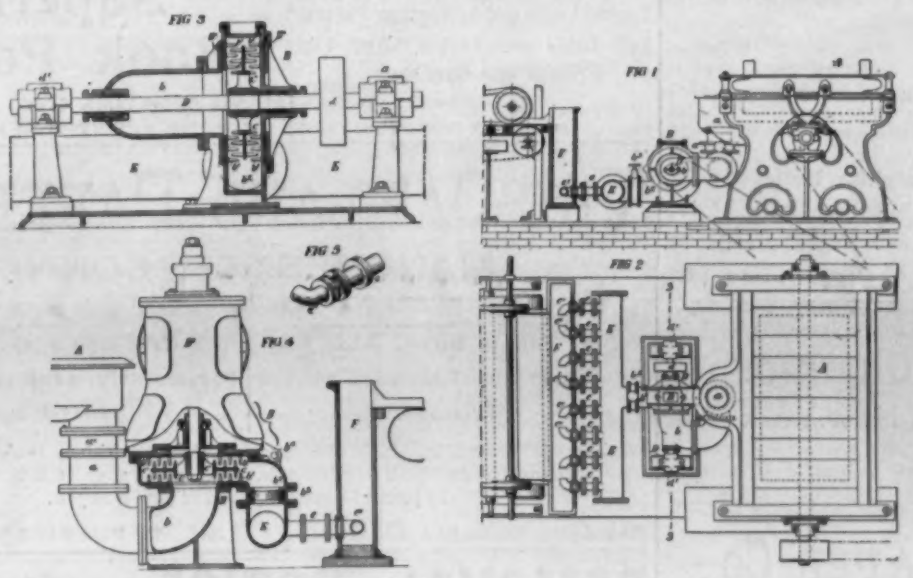
The former rule that a debt due at some future time could not be set off against a present demand has been so modified that courts have granted injunctions restraining collections or making assignments of claims which might endanger the collection of the debt not yet due, and in the case of Miller *vs.* Receivers of Franklin Bank, the court decided that any equitable set-off which the debtor had at the time the bank stopped payment was not altered by the appointment of a receiver, and that it made no difference whether the debt to the bank was then payable or had since become due. The debtor cannot in cases of insolvency and bankruptcy acquire the right of set-off by the purchase of claims, as the right is equitable and will not be allowed to the detriment of other claims against the trust property.

Set-off will also be refused as a fraud on the intention of the parties when goods are sold for cash with express or implied agreement that the money shall be paid at once, without any drawback, because of a prior indebtedness of the purchaser to the seller. Nor can one acquire the right by purchasing through another, as it has been held that an agent who is sued on a contract made in his own name cannot set off a debt due to an undisclosed principal, because the object of the seller must be presumed to have been to obtain the stipulated compensation, and not to satisfy a debt due a third person whom he did not know in the transaction; but where an agent sells goods of an undisclosed principal as his own, in an action to obtain the price the purchaser has a right of set-off for debt of such principal.

The right must be similar to or arise out of the same transaction; thus, if A owe B, the latter cannot plead set-off in an action of replevin of goods unlawfully seized; nor has a tenant the right of set-off for damages claimed by reason of a loss in business from the landlord placing a sign "to let" on the premises, as unliquidated damages cannot be the subject of a set-off.

A joint debt cannot technically be set off against a several one, nor a several against a joint; nor a debt due by one man in a suit against another, under ordinary circumstances. A debt due by a principal may, notwithstanding, be a statutory or equitable defense in an action brought against a surety by the creditor. In like manner, for the furtherance of justice and to prevent circuity of action, a debt due one of the two defendants may be set off equitably in a suit on a cause of action in which both are jointly indebted. A debt due by one of the parties plaintiff in a joint action cannot be set off by the defendant, as he would thereby vary the remedy of the others without their consent. Nor can a debt due by a firm be set off in a suit brought for the individual debt of one of the parties. It has been held that right of set-off exists in a suit to recover the price of land, by reason of misrepresentation in sale; and, of course, the same is true as to personalty.

Of late some courts incline to allow set-off where the claim is in nature of damages for a wrong, and there has been an increasing disposition on the part of courts and legislatures to enlarge the right of set-off sufficiently to cover all cases where the mutuality is real, and this tendency will no doubt go on until the limits of equity are reached, so that whatever claims A and B may have against each other will be adjudicated at one and the same time.



Machine for Breaking Up Strings or Bales of Paper Stock.

Machine for Breaking Up Strings or Balls of Paper Stock.

An illustration is given of a new machine for breaking up the strings or balls of paper stock which form under the screen during the process of manufacturing paper, and which will, if not removed, be carried to the mixing box and form lumps or blotches in the manufactured paper.

Figure 1 is a side view of the device; Fig. 2 is a plan view; Fig. 3 is a section on the line 3—3, Fig. 2; Fig. 4 is a view illustrating a modification of the device; Fig. 5 is a detail view of one of the nozzles.

A is a screen of the ordinary type, and the pulp from this screen passes through the discharge pipe *a* into the passage *b* communicating with a breaker B. In the pipe A is a valve *b'* for regulating the supply of pulp to the breaker and to prevent entrance of air, and thereby prevent foaming of the pulp in the breaker. The breaker B has an inlet passage *b* and an outlet passage b^3, and secured to the casing of the breaker are annular plates B', one on each side, having pins *b'* which project into the pulp chamber.

D is a shaft extending through the casing and on this shaft is secured a disk C having teeth *c* projecting on each side. These teeth extend into the spaces between the teeth *b'* of the fixed plates so that the pulp will be thoroughly broken up in its passage through the breaker. On the shaft D is a belt pulley *d*, the shaft being mounted in suitable bearings *d'*.

The outlet passage b^3 from the breaker is coupled to a manifold discharge pipe, E, which extends preferably the full length of the mixing box F and in close proximity thereto. A valve b^3 regulates the flow of pulp from the breaker to the manifold E. A series of pipes, *e*, extend from the manifold into the mixing box F at the base thereof and the nozzle *e'* of each pipe is arranged at right angles to the pipe and adjustable so that it can be turned at any angle desired. The pipes are arranged in pairs and the nozzles of each pair are turned toward each other, as shown in Fig. 2, so that the pulp as it is discharged from the nozzles will be thoroughly mixed and agitated without undue foaming in the mixing box, so that when the pulp rises to the top it will flow evenly on the top of the paper making machine. By adjusting the nozzles at different angles the stock can be more or less agitated.

It will be noticed that the breaker B is below the level of the pulp in the screen and the mixing box, so that the breaker will always contain a charge of pulp.

Fig. 4 illustrates a breaker having a vertical shaft, and the inlet pipe is arranged to feed the material into the bottom of the breaker, the discharge pipe being at one side.

The upper portion B' of the breaker is pivoted at b^4, so that it can be swung to one side to clean or repair the blades.

By these means it is claimed that pulp having strings or balls will be thoroughly broken up and will be carried to the mixing box without undue foaming therein, and yet be thoroughly agitated, so that when the pulp is floated to make the sheet of paper it will be perfectly even and form paper of the first grade.

It is very little trouble to keep line shafting looking bright and clean, and it helps to keep the accumulated dust and dirt from working into the bearings. A wiping with a kerosened rag (waste is too apt to get caught in the pulleys) once a week will keep it nice after it has once been cleaned in good shape.

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MIAMI VALLEY.

[FROM OUR REGULAR CORRESPONDENT.]

DAYTON, Ohio, October 18, 1894.

A uniform increase in business in the paper trade proved a welcome change in the valley this week. The expression generally is one of encouragement, and it is altogether probable that the past ten days have elicited more straightforward statements from paper manufacturers concerning improved business than for as many months previous. Substantial changes in trade, of course, are not in evidence within a week, but the conditions—which always seem remarkable in the paper trade—warrant the foregoing statement, which will be corroborated in time.

There is naturally a slight feeling of doubt, for old Father Business has worked the shell racket so long that the "now-you-see-it-and-now-you-don't-see-it" old gentleman is little trusted by some who have proved easy but unwilling victims of his harsh shrewdness. Confidence is a great thing if properly applied; but it takes a Japanese general to display it discreetly.

The defalcation of W. H. Thompson, of the Sabin-Robbins Paper Company, Middletown, has been figured at $2,400 by Expert Anker. It is altogether possible that the shortage will be made good, and that Thompson, who is contrite and anxious to terminate his checkered career honestly, will escape criminal prosecution. Mr. Thompson was unusually popular in Middletown, evincing an interest in church matters and contributing liberally to all charities. His downfall was all the more significant to the general public by reason of his prominent participation in Middletown's affairs.

Thompson came to the rescue of the investigators, and succeeded in straightening many perplexities caused by his shrewdness in making false entries. He was anxious to do this and in every way showed his desire to make amends for his actions of the past. A well to do relative was in consultation with Mr. Robbins this week, and it is possible that the deficit in full will be made good. The bookkeeper's mother, in Mobile, has written a touching letter to the firm, and with all of the pressure which will be brought to bear, the guilty one stands a show to escape the law.

A report gained circulation that Thompson had taken poison with suicidal intent, but the physician states that this arose from the fact that he had applied a strong drug to an aching tooth to relieve the pain. The exposé has shown its deleterious effects upon the accused, whose personal appearance has changed noticeably. He has many sturdy friends in Middletown who instead of assisting him downhill will extend a helping hand.

A rumor was vigorously stirred this week concerning Chas. M. Harding's connection with a big railroad deal. The Dayton Traction Company is a local corporation formed for the purpose of running an electric line from Dayton to Cincinnati. It is understood, that the Big Four and other railroad companies have entered into an agreement whereby the former company promises to abandon the project. That there has been a determined fight between the C. H. & D. and the Dayton Traction Company for the right of way between Middletown and Franklin is generally known. It was the intention to build the electric line along the old canal road, north of Middletown, to a point near the crossing of the Short Line, but to escape an uphill run and a sharp curve of several miles the Dayton Traction Company desires to continue parallel with the railroad, thus entering Franklin by a shorter and much better route.

Now comes the report that C. M. Harding, the Franklin paper manufacturer, holds the right of way over this advantageous route, and that both companies are after it. It is not doubtful that Mr. Harding appreciates their position, for he holds the key to a vastly interesting situation. The outcome is purely speculative.

It is apparent that the Hamilton Canal Boat Company anticipates a general business revival among Miami Valley paper manufacturers, and there is every reason to believe that as long as canal rates continue cheaper than those by rail this company will not be disappointed in its expectations. Paper men in this neighborhood consider the "old mule" canal an ineffable blessing, from the fact that it governs to an extent the competitive railroad rates and keeps them within reasonable bounds.

The directors of the newly incorporated company are J. C. Richardson, C. T. Hayman, J. W. Clements, W. J. Haldeman, N. McClelland, F. W. Whitaker and C. C. Richardson. Several of the above mentioned are owners of mills. The company has five packets on the canal, and it is the intention to increase this number to twelve. They are now running boats daily from Cincinnati to Franklin and from Lockland to Hamilton and semi-weekly boats from Cincinnati to Dayton, while a daily schedule for this route will be arranged later. Traffic is increasing and will continue so until we get our ship canal.

By the way, the situation in this national improvement has assumed a rosy complexion. Word was received here this week from the office of the chief engineers of the United States Army saying that the board of engineers provided for by the act authorizing the survey had been appointed, and consisted of Col. O. M. Poe, Lieut. Col. Amos Stickney and Capt. W. L. Marshall, of the corps of engineers of the United States Army. It is also understood that Capt. Samuel Bachtel, chief engineer of the State Board of Public Works, will tender his services in making the survey, and he has secured a leave of absence continuing until February, 1895. Colonel Poe was chief of the engineers on General Sherman's staff during the war and it was then that he became acquainted with Captain Bachtel. Their acquaintance led to the captain's appointment.

The routes to be surveyed are the Miami and Erie, from Toledo to Cincinnati, and the Ohio Canal from Cleveland to Portsmouth, together with such streams and valleys as the engineers may deem advisable. The resolution of Congress provides that the report to that body shall be based upon all of the attainable facts concerning the excavation of a ditch 70 feet wide and 7 feet deep between the lakes and the Ohio River. The report is to be completed by March 4, 1895, and is to state the cost of construction and right of way, number of locks and other structures, and all details of the project. Considering that our neighbor, Pennsylvania, is exerting a vigorous effort to secure the canal, the progress of the surveying crew will be noted with interest.

"The benefit is general," said Captain Bachtel; "a connection between the lakes and the Ohio River means extended transportation throughout an empire, so to speak, to the mouth of the St. Lawrence and its tributaries, to the mouth of the Hudson, to Duluth, to St. Paul and the Rocky Mountains and to all that region penetrated by the Ohio River and its tributaries. The canal, if built, should be deeper than proposed by Congress in order to permit the passage of larger boats than would be possible with a depth of only 7 feet. I am a firm believer in the efficacy of water transportation and especially the plan in view."

Attorney P. H. Rue, assignee in trust for the Friend & Forgy Paper Company, at Franklin, again met with another failure the other day so far as the disposal of the mill was concerned, though he sold one or two lots contiguous to the mill and belonging to the estate. The sale is again advertised for November 17. The mill is appraised at $64,000.

A number of mill men enjoyed an outing at Shoup's resort, a few miles north of the city, the other day. Among those in attendance were E. B. Weston and John Stoppleman, of the Weston Paper and Manufacturing Company, and Dr. P. N. Adams, of the Weston Paper Company, Greenfield, Ind.

The dedication of the new Protestant Deaconess Home and Hospital this week was a matter of general interest to the trade, the members of which subscribed liberally in the establishment of the charity. The building cost about $150,000, and will be a lasting monument to the generosity of the fair Gem City. H. H. Laubach, of the Dayton Paper Novelty Company, and A. A. Simonds, of the Simonds Novelty Company, were members of the building committee and performed their arduous duties commendably, and took active participation in the formal dedicatory services.

Michael Rider, employed at the Gardner Paper Mill, Middletown, suffered an injury to the first two fingers of his left hand while handling a truck this week. Amputation of one of the fingers proved necessary.

Richard McNamee, representing the clay industry, circulated in trade circles this week.

C. D. Mead has returned from a Western trip, while the Colonel is in the East. These two doughty manufacturers, who are always abreast with cosmopolitan ideas, have fitted up a completely new office west of the hydraulic. A modern style of architecture is in evidence; also every metropolitan detail. The office will be one of the most spacious in the State, containing six large rooms—and more available space, if necessary—and to say that it will be cozily furnished is only pure waste of wind. Head Bookkeeper Arthur Reiger struts about as proudly as he did on the stage at the Grand some time ago in the character of "Pickwick."

Howard Friend is again at his office after a hustle East and West.

Charles Whealen has returned from New York, and this week covered his State district. It is understood that he did not decide upon a location for the new mills of the American Casket Company.

Wes. Troup, of the Troup Blank Book Manufacturing Company, was compelled to undergo a delicate operation the other afternoon. Six of the best-known surgeons in the country were in attendance, and although no hope was expressed for his recovery prior to the operation, he has gradually improved, and his complete recovery is now expected.

The White Paper Company is running night and day. General Manager Young reports that an unusual rush compells them to operate incessantly.

M. V.

FOX RIVER VALLEY.

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., October 16, 1894.

There is nothing particularly new to report in the matter of the English syndicate. Mr. Butterworth, the promoter, is out of town and has been for several days, and there have been no developments beyond those previously referred to. Public interest in the matter is by no means waning, however. One indication of the feeling was voiced last week in a letter to a Menasha paper over the signature of John Strange, of the John Strange Paper Company, who thinks that the purchase of the mills by the syndicate would be a good thing for the manufacturers, but a poor thing for the district at large. He says in the first place that it would be un-American to sell out to the English, but of course this is only a sentiment. The result of such a sale, however, he thinks, would come home to the people in the effect it would have upon the banks. He figures that the paper mills are paying interest each year to the banks upon about $3,000,000 borrowed money—an interest account of not far from $220,000 a year, at least $100,000 of which reaches the pockets of the "poor" man and the farmer, who have their money in the banks and are drawing their 3 per cent. therefor. Mr. Strange thinks that if the sale went through the banks would not be able to pay interest upon such deposits. He is not of opinion, either, that manufacturers would to any great extent go into other manufacturing business after they got out of the paper trade, and consequently the money they would receive from the syndicate would not go to make things livelier in the Valley. Then, again, the syndicate would buy all of its supplies cheaper than now, and this would be particularly true of the 150,000 cords or so of pulp wood annually taken out of the woods for the mills.

As an evidence of the strength of the feeling of probability here that the deal will go through it may be mentioned that a prominent paper manufacturer of Kaukauna began several weeks ago to build a $12,000 house in that city. He got the foundation in a couple of weeks ago, but now he has covered it up and abandoned the work. He says that if the matter is accomplished he will not want to live in Kaukauna, and the syndicate can finish the house if it wants to!

The condition of trade hereabouts continues to be without material change. It is possible that the impulse felt in September has not kept on increasing, as it was hoped that it might, but the mills as a rule are doing all that the low water will let them; and considering the times generally, no great complaint is called for.

Architect C. B. Pride, of this city, departed last night for Chicago, carrying with him the plans for the new mill to be built in that city by the Riverside Paper Company. As is generally known, the principal man in this concern is J. H. Friend, of West Carrollton, the other members of the company being Chicago capitalists. It is proposed to build the mill this fall and winter, so that one machine can be put in operation as early as possible at the beginning of the year. The size of the plant will be increased afterward as occasion may demand. The mill will be located at Twenty-third street and Kedsie avenue, near the crossing of the Chicago River, in the vicinity of the McCormick Reaper Works. It will be of stone and brick, and in every way a fine structure. The motive power will of course be steam, as there is no water power, and three engines will probably be put in. The machine will be 86 inches in width, and four engines will probably be put in at first. The mill will make print paper.

Work on the mills at Shawano, Oconto Falls and Eau Claire, in this State, which has previously been mentioned in these columns, is approaching the finishing stage. At Oconto the piping and belting are being attended to, and the mill will be started some time this month. At Eau Claire it is expected that the pulp mill will be started on Saturday or Monday next, and the paper mill about a week after. At Shawano the pulp mill will probably go into operation this week.

Measures have lately been taken by the Ashland Fibre Company, of Ashland, in this State, to increase its capacity. It will put in new machinery, which is expected to enable it to make 12 tons of fibre a day.

The Ravine Mill of the Fox River Paper Company in this city will go into operation this week. The repairs upon the structure and the machinery have taken longer to accomplish than the construction of a new mill and the company is anxious to get

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the plant in operation. The company has of late been doing considerably more work upon the tail race leading from its various mills. and now thinks that it has the finest race in the Valley. The water escapes without a ripple from the wheels, and the effectiveness of the power has been much improved.

At a meeting of the City Council last week, the interurban railway ordinance was reconsidered and the franchise was granted to the company. The representative of the concern says that work will begin this fall, and that the road will be in operation along its whole length by July 4 next. The line from Oshkosh to Kaukauna will be about 30 miles long, and the route will take it along the shores of the most beautiful portions of Lake Winnebago, which of itself will be productive of an immense travel during the summer months. The advantages of frequent communication between all of the cities of the Fox River Valley will be obvious.

Work was begun this week upon the enlargement of the plant of the Appleton Machine Company, mention of which was made in this correspondence a week or two ago. It is good evidence of the company's prosperity.

The benefit ball for Major Moore, given by the paper makers of this city last Saturday night, was a tremendous success. More than 600 tickets were sold and the crowd was so great that the dancing floor could hardly accommodate the people. Nearly $300 was realized to be devoted to the worthy cause. Major Moore was hurt in a paper mill several months ago and has not since been able to work.

Robt. Pride, the pulp manufacturer, has almost completed the rebuilding of his new house in this city and expects to get into it in a week or two.

William M. Van Nortwick, of Batavia, Ill., is in town, the guest of J. S. Van Nortwick.

C. W. Brown, formerly of the Fox River Paper Company, who has been visiting friends in Chicago, was in Appleton last week, saying good-bye preparatory to starting for California, where he expects to reside hereafter. FOX RIVER.

BOSTON.

[FROM OUR REGULAR CORRESPONDENT.]

EASTERN OFFICE PAPER TRADE JOURNAL,
67 FEDERAL STREET,
BOSTON, October 18, 1894.

There is very little of a newsy nature to report this week concerning business itself.

The movement of paper from dealers' hands continues right along and of very fair volume, but not up to the old time average of years before the depression.

Water throughout New England is in good supply, owing to the several rainstorms of last week, and paper manufacturers are a little more cheerful in consequence. Big mill orders for paper are not so plenty as looked for, and the output with most of the mills is running pretty close to booked orders.

The paper stock market is without interest except to importers and dealers, and even these are not obliged to take much account of business, as orders for paper stock are not very liberal in size or in number. It is not likely that trade in paper stock will show much improvement until next January. In the meantime business will possibly continue in a limited way as during past months.

Waterhouse, Shannon & Munroe's paper storerooms, in the buildings Nos. 115 and 119 Broad street, were damaged somewhat by fire and water last Saturday night. The loss to the stock is now being adjusted, but whatever it is the insurance will cover it.

Phil. A. Bour, general manager of the Pennsylvania Salt Manufacturing Company, and Charles Dobilinski were in town this week.

Other visitors were A. C. Moore and F. W. Flint, of Bellows Falls, Vt.; J. T. Emerson, of Claremont, N. H.; Chas. S. Barton, W. H. Gray and Mr. Williams, of Worcester, Mass.; W. D. Judd, W. H. Caldwell and D. P. Williams, of Holyoke, Mass.; Augustine Smith, of Lee, Mass.; W. E. Everett, of Turner's Falls, Mass.; Mr. Gage, of Pepperell, Mass.; W. E. Sheehan, of Oriskany, N. Y.; Charles Weeks, of Skaneateles, N. Y.; Mr. Botsford, of Kalamazoo, Mich., and J. H. McCormick, of New York.

Frank T. Kenah, with the A. Storrs & Bement Company, was married last Wednesday evening, Annie Louise Eldridge being the name of the bride. The young couple are now on their bridal tour and will be at home on Tuesdays, November 6 and 13.

Charles Dobilinski entertained a party of friends at dinner at the Tremont House last night. The table was set in a private dining room and covers were laid for eight, all of his guests being members of the trade. Mr. Dobilinski delegated the honors of the table to his friend Harry T. Bartow, the Chesterfield of the trade, who performed the duty in his usual graceful manner and kept the guests in a happy humor.

A very quiet and select party of gentlemen left town on Monday by the 4:15 P. M. train for Portland, Me., although the objective point was Rumford Falls, and the point of interest the new plant of the Rumford Falls Woolen Company, which concern will be turning out paper makers' felts in a few weeks.

Col. S. P. Train, president of the company, and Charles D. Brown, whose Boston house has the selling agency of the product—Oxford felts—are the leading spirits in this enterprise. Other stockholders are Hugh J. Chisholm and Waldo Pettingill, of Portland; M. L. Bassett, of Lowell, Mass., and Geo. N. Fletcher, of Detroit, Mich.

The excursion was under the direction of Charles D. Brown, and when the party had registered at the Falmouth House that night the list of names included Col. S. P. Train, Charles D. Brown, S. G. Train, Geo. W. Hammond, Wm. H. Claflin, George Cox, Jr., Curtis Clark and A. L. Delesdernier, all of Boston; Allan Rogers, of Salem, Mass.; M. L. Bassett, of Lowell, Mass.; J. H. McCormick, of New York; ex-Governor Cheney and Mr. Fish, of Manchester, N. H.

The evening was pleasantly spent at the Cumberland Club, where every visitor found all of the comforts of home.

At 8:30 the next morning the party assembled at the Union Depot and took the train for Rumford Falls, a special car having been provided for the trip by Hugh J. Chisholm, president of the Portland and Rumford Falls Railway Company, and a stockholder in all of the industrial enterprises of Rumford Falls.

Quite a number of the prominent men of Portland, members of the Cumberland Club and other gentlemen interested in the development of Rumford Falls, joined the party from Boston at Portland and at other places along the route.

A full list of the party includes the following names: Hugh J. Chisholm, E. B. Winslow, president Portland Board of Trade; Chas. R. Milliken, Robert Williams, Weston Milliken, Wm. R. Wood, C. G. Allen, P. E. Philbrick, A. S. Rines, A. E. Noyes, H. P. Ward, W. F. Jordan, Chas. Merrill, F. R. Higgins, R. T. Walker, Waldo Pettingill, all of Portland; A. J. Lyon, of Brunswick; Geo. N. Fletcher and Allan M. Fletcher, of Detroit, Mich.; S. L. Wagg, of Appleton, Wis.; Chas. S. Milliken, of Mechanic Falls; ex-Governor Cheney and Mr. Fish, of Manchester, N. H.; M. L. Bassett, of Lowell, Mass.; Allan Rogers, of Salem, Mass.; J. H. McCormick, of New York; Col. S. P. Train, S. G. Train, Charles D. Brown, George Cox, Jr., Wm. H. Claflin, Curtis Clark, C. H. Cushman, Geo. W. Hammond and A. L. Delesdernier, all of Boston.

Arriving at Rumford Falls, the visitors took up their line of march, heading for the Rumford Falls Woolen Company's plant. This mill was thoroughly inspected, the machinery examined, and many favorable comments were made upon the condition of things.

The works of the Rumford Falls Chemical Company were viewed from the elevated roadway in passing over to the mills of the Rumford Falls Paper Company, and some time was given to inspecting the stone foundations of the Rumford Falls Sulphite Company now completed and upon which will soon be erected the buildings of the company. After going through the wood room, the pulp mill, the machine rooms and shipping room of the Rumford Falls Paper Company the visitors proceeded to the Rumford Falls Hotel, where dinner was served. After dinner many of the party walked out to have a look at the dam, but the tooting of the locomotive whistle soon collected the party, and at 2 P. M. the train pulled out on its return to Portland, arriving there in time to make connections with the 6 o'clock train, due in Boston at 9:30 P. M.

Of the party which made that trip on that train—some remained at Rumford Falls, and some were left at Portland—all were prepared for a good time, and they were really enjoying themselves until the train reached Ipswich, some 13 miles north of Salem, when it stopped and the conductor reported a wreck of freight cars on the track a few miles ahead. The result was that about 2 o'clock in the morning several of the belated passengers were roaming about the Boston hotels looking for a room. Your correspondent took a hack for his suburban home, and at 3:50 A. M. rang his door bell for admission. It took several pulls at that bell and some conversation before the door opened unto him. DELESDERNIER.

HOLYOKE.

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., October 18, 1894.

The local trade has been much better off this week than of late because there has been plenty of water to run the mills, and therefore no time has been lost.

The rain which fell the latter part of last week was the cause of this favorable change, and a fine sheet of water has been flowing over the dam every day this week.

The change in business, however, has not been very important. The mills are doing a quiet trade on a safe basis as regards the accumulation of finished goods. The machinery is kept in motion by orders on hand, and although these are not large they aggregate a sufficient number to keep the machines and help busy. The increase in the production will probably be slow and sure.

The improvement in business keeps pace with the stock market, and while the manufacturers are not buying beyond actual needs, the enterprising drummers manage to work off a sufficient amount of stock to make it an object. Prices have not changed very much, and, on the whole, there is very little of interest transpiring in this branch of the business.

The German-American Publishing Company, of this city, has just made this return of the condition of its affairs: Fixed capital, $5,000; capital paid in, $5,000. Assets—Buildings, $7,500; machinery, $2,519; cash and debts receivable, $2,202; manufactures and merchandise, $5,784; miscellaneous, $1,756; total, $19,762. Liabilities—Capital stock, $15,000; debts, $14,762; stock, $5,000; total, $19,762. The company publishes a number of weekly newspapers in the German language.

George Harvey, an employee of the Connecticut River Paper Company, met with a singular accident at the mill yesterday, which may result fatally. He had occasion to ascend to a platform in the cellar of the mill, and used a ladder to mount to the platform. Another employee came along in search of a ladder, and noticing the one which Harvey had used, took it away with him. When Harvey started to leave the platform he failed to notice that the ladder had been removed, and stepped off into space. He fell a distance of 12 feet, and injured himself internally.

The Purcell Envelope Company has settled down to business, and is turning off the desired number of envelopes every day. The croakers who said that the locating of the company in this city was all a bluff are keeping very quiet.

Wesley D. Spears, who for quite a number of years has been the faithful foreman of the American Pad and Paper Company's manufacturing department, has severed his connection with the company and will leave the city.

Fred. Britton, president of the National Paper Makers' Union, who has been a foreman in the employ of the Falls Mountain Paper Company, of Bellows Falls, Vt., is visiting in this city.

The brickmakers in this vicinity have had an unusually quiet season, and the product has been much smaller than heretofore. Lynch Brothers, who have generally made 10,000,000 or more, have turned out only 5,000,000 during the past season, and Landers Brothers have made about as many more. The sum total of mill work has been very small this year, and the outlook for future building operations is not very bright just now.

Adam Ramage is the candidate for representative in the third district on the Socialistic labor ticket. P. J. Kennedy, of the *Democrat*, is the Democratic nominee. As the district is strongly Republican, Messrs. Ramage and Kennedy are badly handicapped.

Eagle Lodge United Order of Paper Makers is arranging for its annual ball at the City Hall on November 9.

The wedding of Edward B. Sellew, local representative of the Springfield *Republican*, and Frances E. Potwin took place yesterday afternoon.

The Sytoneah Canoe Club tendered Mr. and Mrs. George S. Parsons a very pleasant reception on Tuesday night. H.

A Suit Brought.

[By Telegraph to the PAPER TRADE JOURNAL.]

DAYTON, Ohio, October 18, 1894.

The Haldeman Paper Company, of Lockland, has brought a suit against the American Straw Board Company for $41,250 for alleged refusal to comply with the terms of the lease of the Rockdale Mills. M. V.

Mortgages, Etc.

[In the appended list R. signifies a renewal of a pre-existing mortgage; B. S., bill of sale; T. D., trust deed, and Real, a mortgage on real estate.]

EASTERN STATES.

Mortgagor.	*Amount.*
William L. Ripley, Quincy, Mass.	$800
C. F. Rawson, Providence, R. I.	300
Morris Rubin, Providence, R. I.	—

MIDDLE STATES.

S. Block, Brooklyn, N. Y.	100
Geo. G. Marvin, Gloversville, N. Y. (B. S.)	800
Geo. Bradley, Rochester, N. Y.	250

WESTERN STATES.

Review Printing Company et al., San Francisco, Cal.	550
App-Stott Printing Company, Denver, Col.	4,005
L. E. O'Brien, Elmwood, Ill.	250
S. Sherman, Bussey, Ia.	130
McKeen & Bock, Ida Grove, Ia.	4,000
W. H. Schooley & Son, Indianola, Ia.	1,400
John F. Dalton, Manson, Ia.	580
F. L. Burton Printing Company, Ottumwa, Ia.	275
A. J. Smith, Washta, Ia. (B. S.)	700
R. B. Armstrong, Kansas City, Kan.	600
Hendry & Humphrey, Nickerson, Kan.	471
A. B. Turner & Co., Grand Rapids, Mich.	14,113
Oliver M. Holmes, Great Falls, Mont.	2,000
J. L. Grunlee, Blair, Neb	475
O. A. Brown, Plattsmouth, Neb.	2,300

SOUTHERN STATES.

J. M. Norris, Ash Grove, Mo.	150
Burton L. Clark (Calvert & Clark), Bosworth, Mo.	150
Pauline Dickson, Carrollton, Mo. (Real)	1,360
Bert. H. Myrick, Guilford, Mo.	225
W. M. Shirley & Brother, St. Joseph, Mo.	850
W. D. Parker, Waco, Tex. (T. D.)	—

CANADA.

H. T. Stevens & Co., Moncton, N. B. (B. S.)	1

LIENS DISCHARGED.

E. W. Thurman et al., San Francisco, Cal.	1,100
J. H. Cushenberry (L. H. Cushenberry & Co.), Girard, Kan. (Real)	1,000
E. W. McKay, Portis, Kan.	200
Zander Brothers, St. Paul, Minn.	—

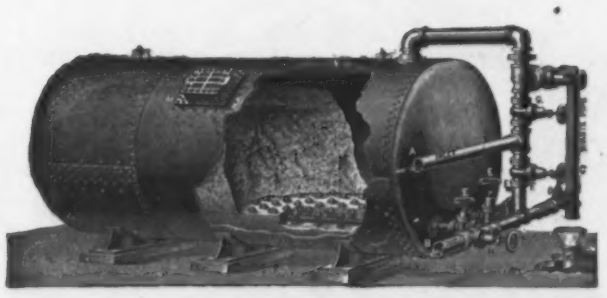
Goods in Bonded Warehouse.

Goods in the stationery and allied trades in bond at this port on September 30, 1894, as compared with those in bond on the same date in 1893, are as follows:

	1894.	1893.
Art works	$30,642	$89,701
Books, maps, &c.	40,276	51,419
Coal tar colors	51,979	....
Soda caustic	9,963	14,675
Soda ash	16,511	50,033
Cutlery	78,649	89,059
Paper, and manufactures of	50,860	121,415
Wood pulp	19,183	18,917
Toys	67,258	118,938

A chattel mortgage against the A. B. Turner Publishing Company, Grand Rapids, Mich., has been foreclosed.

THE PUSEY & JONES COMPANY,
—Builders of—
WILMINGTON, DELAWARE.
PULP & PAPER MACHINERY
Sole agents for the SALOMON-BRÜNGGER SULPHITE PATENTS.
WELDED DIGESTERS furnished only by THE PUSEY & JONES COMPANY,
CORRESPONDENCE SOLICITED — WILMINGTON, DELAWARE.



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Protected by Patents.
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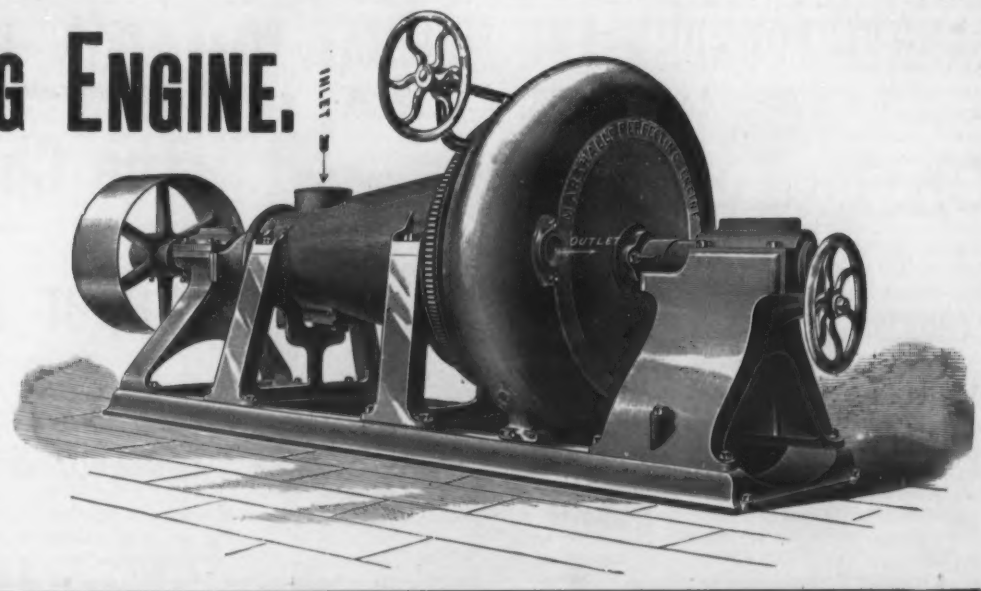
MARSHALL'S PATENT PERFECTING ENGINE.

SUITABLE FOR ALL CLASSES OF STOCK
AND EVERY QUALITY OF PAPER.

This Engine will produce a **better finished, stronger** and **more even** sheet of paper from the same materials than can be produced by any other mechanical process, and at the same time will greatly **REDUCE** the **TIME** and **POWER** required for Beating.



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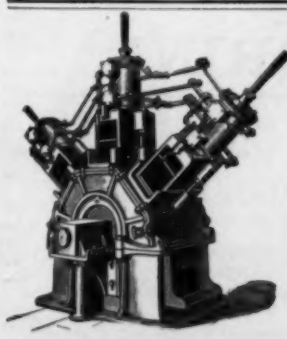

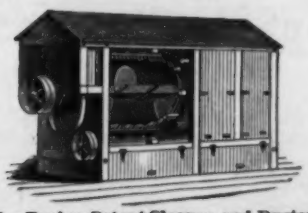

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All Kinds of CALENDERS for PAPER MILLS, GLAZED PAPER and CARDBOARD MANUFACTURERS.

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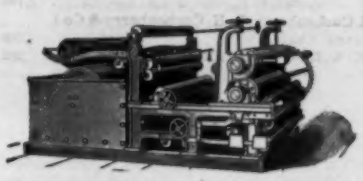

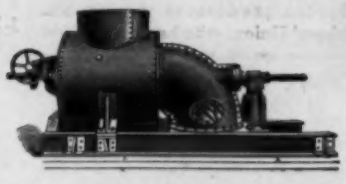

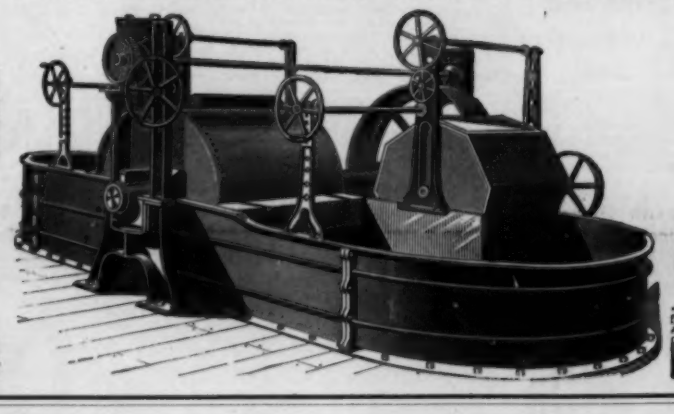

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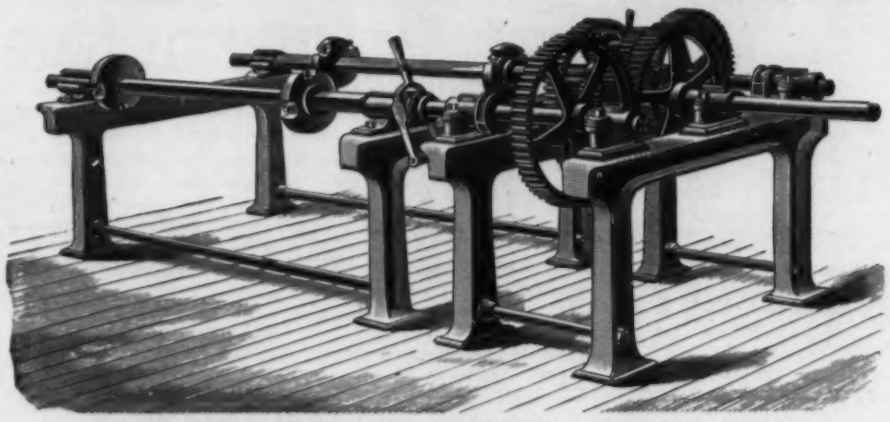

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LATEST DESIGNS. GREATEST RECORD OF PRODUCTION. HIGHEST DEGREE OF WORKMANSHIP. INSURING MINIMUM OF AFTER EXPENSES FOR REPAIRS.

Compensating Winders for any desired number of rolls.
Two and Three Plunger Stuff and Suction Pumps.
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Bronze, Rubber Covered and Chilled Iron Press Rolls,
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WHEN YOU WANT ANYTHING IN OUR LINE WRITE US BEFORE ORDERING ELSEWHERE.

DO NOT FORGET

That every ***New England Pulp Grinder*** ever made or sold in this country has been designed, built, and first sold by me; and I am sole owner of the right to use the name "New England" as applied to a pulp grinder, as the United States Patent Office records will show, and no other person is or has ever been interested with me in the manufacture of Pulp Machinery.

All the rights and interest of the Scott & Roberts Company and the New England Pulp Machine Company which were organized for the purpose of selling my pulp machinery were acquired by me more than four years ago, since which time many changes and improvements have been made in the New England Pulp Grinder.

I am prepared to furnish at short notice everything required for making ground wood pulp, including plans and specifications, and estimates for which I will furnish same; and erect the whole, if required, ***guaranteeing a greater production of pulp,*** with a given power and at a less cost for manufacture, than can be done by any other machines; and no pay asked until machines perform as stipulated.

Can furnish any of the leading ***Turbine Water Wheels,*** fifteen styles ***Pulp Grinders, Noiseless Screens, Wet Presses, Sawing Machines, Barkers, Splitters, Pumps, Shafting, Mortise Gears, Pulleys, &c.***

Remember you can have a ***guaranty*** of the ***cost*** of ***your mill;*** also of the ***cost per ton to manufacture the pulp.*** Liberal terms.

I have on hand ***six Pulp Grinders,*** three pocket, to grind wood 17 inches long; and ***eight Grinders,*** heavy pattern, to grind wood 24 inches long; also ***Barkers*** and ***Splitters.***

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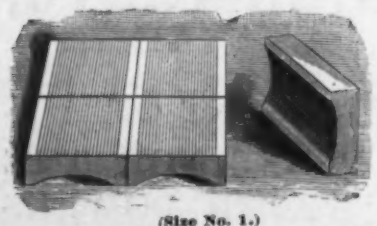

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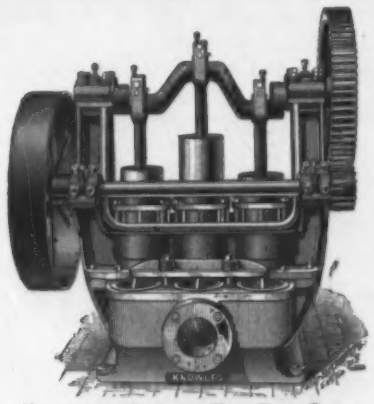

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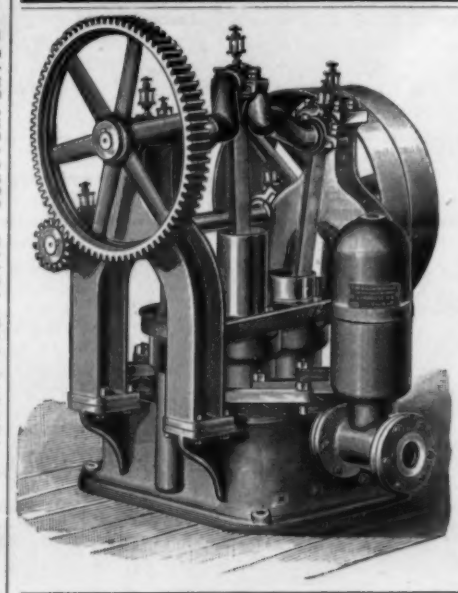

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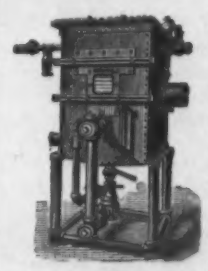

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[WRITTEN FOR THE PAPER TRADE JOURNAL.]

By James F. Hobart.

Fourth Paper.

Before a man finishes a job it is always well to look back over the work and see if something has not been left undone. Some part is liable to get covered up and therefore be left unfinished; or when a man tries to be in two places at once as nearly as possible, he is sure to fail to get there as completely as he might wish. So it is with discussing both construction and operation. The field is so large that several things have not been so thoroughly discussed as their importance demands.

STRENGTH OF SEAM.

This was the case in talking about the bursting strain and safe working pressure of a steam boiler. It may be stated that the riveted seam has a certain percentage of the strength of shell, that per cent. being 56 for single, 70 for double riveting and 87 for double strap butt joint, triple riveted. Now, an engineer may accept this statement regarding the strength of seams, but if he is a wideawake, enterprising man he is not satisfied with the mere statement, but wants to know why a thing is so and how it is proven.

It is evident that if we put only two or three rivets in one of the longitudinal seams of a boiler the pressure carried in the shell will shear off the few rivets long before it will burst the shell. Also that if the rivets were put very close together there would then be no danger of shearing the rivets, but the little plate left between the rivet holes would be torn asunder long before the shearing strength of the rivets or the bursting strain of the shell was reached. It then stands to reason that there must be two calculations made, the first, to find with any given seam what percentage of the solid plate may be taken as the strength of the rivets in the seam; also another calculation to show the percentage of the metal remaining in the sheet after punching or drilling the rivet holes.

PERCENTAGE OF RIVETS IN SEAM.

As it is generally conceded that the shearing strength of an iron rivet is nearly equal to its tensile strength, it is only necessary to compare the area of the rivet with the area of the plate remaining after the holes are punched in order to find its percentage of strength. With steel plates the matter is different, for iron rivets are yet generally used, steel not having been adopted, owing to a certain untrustworthiness which makes it liable to break or snap in two just under the heads. To find the percentage of strength of the rivet as compared with the strength of the plate we must know the area of the rivets, the number of rows of rivets, the pitch and the thickness of the plate. Then, the area of the rivets multiplied by the number of rows of rivets and divided by the pitch multiplied by the thickness of the plate will be the proportional strength of the rivets compared with that of the plate.

PERCENTAGE OF PLATE AT SEAM.

To find the percentage of plate at the seam we must know the pitch of the rivets and diameters of the rivet holes. Then from the pitch of the rivets subtract their diameter and divide the remainder by the pitch, the quotient being the percentage required. It may be more readily comprehended if the reader should follow through the calculations necessary to determine the strength of a seam. At the same time the calculations will show that the same pitch and diameter of rivets does not make the strongest possible seam for plates of various thickness, but that both the pitch and diameter of the rivets should vary with the thickness of the plates.

For example: Take plates $\frac{3}{8}$ = .375 inch thick, with $\frac{3}{4}$ = .75 inch rivets and a pitch of 3 inches. Then the section of rivet (.75 × .75 × .7854 = .4418 inch) being found, the equation becomes:

$$\frac{.4418}{3. \times .375} = 39 \text{ per cent.},$$

but the strength of the plate at the seam being measured by

$$\frac{3. - .75}{3.} = 75 \text{ per cent.}$$

This shows a very badly proportioned seam, and one which does not come anywhere near to 56 per cent., the accepted maximum strength for single riveted seams. Now, let us see how it can be improved. There is a difference of 36 between the two percentages, and by some means they must be brought closely together. The strength of the plate is too great, and the strength of the rivet section is too small, so the remedy would seem to be—put the rivets nearer together, or make them larger. Perhaps it will figure out right to do both.

If the pitch is decreased to 1⅞ inches, then the rivet section will figure:

$$\frac{.44179}{1.875 \times .375} = 63 \text{ per cent.}$$

and the plates will figure:

$$\frac{1.875 - .75}{1.875} = 60 \text{ per cent.}$$

This makes a well proportioned seam, there being a difference of only 3 per cent. between them, and both ranging above the 56 per cent. usually allowed to a single riveted seam. Yet if it is possible to make them both more nearly equal it would be an advantage, and to do so we will try the experiment of spacing the rivets 2 inches apart; then:

$$\frac{.44179}{2. \times .375} = 58 \text{ per cent. rivets,}$$

and

$$\frac{2. - .75}{2.} = 62 \text{ per cent. plate.}$$

This is a move in the wrong direction. It goes back toward the 3 inch pitch, which has been shown to be too great; but if we try a larger rivet and the 2 inch pitch something new may be found. For instance, with a $1\frac{1}{16}$ inch rivet, having a decimal diameter of .8125 inch, the equations would be, rivets:

$$\frac{.51849}{2 \times .375} = 69 \text{ per cent.},$$

and plates:

$$\frac{2. - .8125}{2.} = 59 \text{ per cent.}$$

Here we are getting apart again and must make the pitch greater, or go back to the smaller rivets again. So let us try 2¼ inch pitch, which figures, rivets:

$$\frac{.51849}{2.25 \times .375} = 61\frac{1}{2} \text{ per cent.},$$

and plates:

$$\frac{2.25 - .8125}{2.25} = 63\frac{1}{2} \text{ per cent.}$$

This is a good seam, and the percentages come within 2 per cent. of being equal to each other. It is a little better than the 1⅞ pitch, ¾ rivet, the weakest factor of which was 60 per cent. (the plates), or 2½ per cent. weaker than the last seam figured.

Perhaps the $1\frac{1}{16}$ pitch would be better by using the ¾ inch rivet with it. The equations will tell, and they are:

for rivets:

$$\frac{.44179}{1.9375 \times .375} = 60 \text{ per cent.},$$

for plates:

$$\frac{1.9375 - .75}{1.9375} = 61 \text{ per cent.}$$

These come about the nearest of any ratios we have figured, but it would not be advisable to use the $1\frac{1}{16}$ inch pitch, for it is hard to lay out. It is not well to go closer than eighths of an inch in laying out pitch, and sixteenths in diameter of rivets; and there is another thing: while the $1\frac{1}{16}$ inch pitch has the strength of the rivets and shell closer together than the 2¼ pitch with a $\frac{15}{16}$ inch rivet, there is the fault that neither part of the seam is quite as strong as the latter. There is also more work in making the seam $1\frac{1}{16}$ inches pitch.

It is more work, as stated, to lay out that seam, and there are also more rivets to drive—two telling considerations; therefore, we may take it that for three-eighths inch plate, single riveted seams, a pitch of 2¼ inches and a $\frac{15}{16}$ inch rivet is the best.

(To be continued.)

Improvement in Dryers.

It is important that the drying cylinders of paper making machines shall remain as nearly as possible at a uniform temperature, and to maintain this and to operate the dryers in the most economical and satisfactory way it is necessary to control in some certain and positive manner the discharge of the water of condensation, and to remove the air. The invention herewith illustrated is designed to accomplish these results.

Figure 1 is a front elevation of five drying cylinders; Fig. 2 is a vertical section through the axis of one of the cylinders, the cylinders all being constructed in the same manner; Fig. 3 shows a form of valve to regulate the amount of water discharged from the discharge pipe.

A represents one of the drying cylinders of an ordinary paper making machine, mounted in suitable bearings at *a a*, in which it revolves.

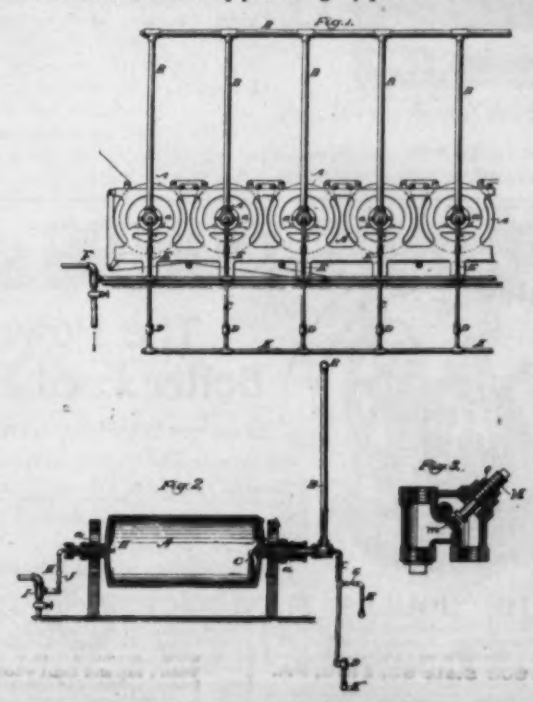
B is the steam supply pipe for admitting steam from any suitable source into the interior of the cylinder. This pipe is connected with the journal at one end of the cylinder, as represented in Fig. 2.

C is a discharge pipe through which the water of condensation is discharged from the cylinder. This pipe passes through one of the journals of the cylinder and its inner end extends preferably down nearly to the bottom of the cylinder, or far enough to enable the quantity of water in the cylinder to be kept at such a point as may be desired, or substantially all removed. The outer or discharge end of this discharge pipe is provided at its lower end with a trap, preferably a valve device, to prevent ingress at that point. In the form of apparatus shown in the drawings at Figs. 1 and 2 this trap is formed by an ordinary check valve, D.

K is a common drain pipe for the water of condensation, with which the separate discharge pipes from the separate cylinders are all connected.

E is an escape pipe. It is connected at one end with the discharge pipe C, above the point to which the water of condensation must rise in the discharge end of the discharge pipe to pass through the trap. It has been found in practice that a point below the highest part of the discharge pipe, say 6 inches or more, is the best place at which to connect the escape pipe with the discharge pipe. At the other end of the escape pipe suitable means are provided for keeping up the discharge through this pipe, such, for example, as an ejector for producing a positive discharge by means of a jet of fluid, as represented at F. The escape pipe is provided with a restricted passage or opening, G. This may be formed by some suitable valve, or it may be a restricted passage in the pipe itself. The object of this restricted passage is to limit the quantity of vapor or air passing through the escape pipe.

H is an air pipe which extends into the cylinder through one of its journals. It is preferably provided with an exhauster at its outer end, as represented at I. The purpose of this pipe and exhauster is to remove the air from the cylinder. It is also provided preferably with a restricted opening or with a valve of any suitable form. An automatic valve to work by expansion by heat may be used upon the air pipe, but it is preferred to reduce the size of the pipe itself, as at J, so as to form a restricted passage.



IMPROVEMENT IN DRYING-CYLINDERS.

In cases where the system is run under a pressure above the atmosphere a check valve provided with a regulating device, which may be set to prevent the valve from discharging more than a given quantity of water in a given period of time, is used upon the discharge pipe in place of an ordinary check valve, which is represented at D, as forming the trap. In Fig. 3 is shown a check valve having such a regulating device.

The regulating device consists of a threaded spindle, M, passing through the threaded cap of the valve, and adapted to be screwed in or out so as to regulate the distance between the inner end of the spindle and the valve disk *m*. The inner end of the spindle thus acts as a stop to prevent the valve disk *m* from opening beyond the point at which the stop is set.

O is an ordinary lock nut to lock the spindle in any desired position. By thus regulating the extent to which the valve disk *m* can be opened, the amount of water discharged through the valve can be controlled.

Each cylinder of the machine is constructed in the manner described. The discharge pipes from the cylinders connect with the common drain pipe K, from which the water is conducted to any point desired.

The operation of the apparatus is as follows: When the machine is first started the cylinders are full of air. It is necessary to remove this air, and to accomplish this result the air pipe H is opened, and when an exhauster is used it is started. The air contained within the cylinder will pass out through this air pipe. At the same time the valve in the steam supply pipe is opened and the supply steam is admitted to the cylinder. The steam at once begins to condense and the water of condensation drops or flows down to the bottom of the cylinder and collects at that point. As soon as a sufficient quantity of water has collected to reach up above or seal the inner end of the discharge pipe the exhauster connected with the escape pipe is put into operation.

It will be understood of course that the exhauster of the escape pipe may be started at the same time as the exhauster of the air pipe, or as soon as the steam is let into the cylinder, in which case it will serve at the outset to assist in removing the air. When the water in the cylinder has sealed the inner end of the discharge pipe, if the exhauster on the escape pipe is in operation, the air or other contents of the escape pipe will be drawn out slowly through the exhauster, producing a partial vacuum or pressure lower than that within the cylinder between the exhauster and the restricted passage or opening of the escape pipe. As soon as this partial vacuum or decreased pressure is produced in the escape pipe the air and some of the other contents in the discharge pipe will slowly pass out through the restricted opening of the escape pipe. By reason of the fact that this opening or passage is restricted, the air or other contents of the discharge pipe will be prevented from flowing out from the discharge pipe quickly.

As the discharge pipe becomes partially exhausted the hot water from the drying cylinder will rise in the discharge pipe C to its highest point and will then flow down in a current toward the discharge end; and as the opening or passage of the escape pipe G is out of the direct path of the water as it flows down the discharge pipe, the greater part or the whole of such water flows downward past the escape pipe and collects gradually in the discharge end of the discharge pipe until it rises high enough to pass through the trap at the discharge end of this pipe, after which the water begins to discharge therefrom separated from the air and vapor which pass out through the escape pipe. The escaping current of hot water and vapor from the cylinder is thus divided between two discharge orifices, the one at the discharge end of the discharge pipe for the greater part of the whole of the hot water substantially unmixed with air or vapor, and the other formed by the escape pipe for the vapor with or without air and with or without a small portion of the condensed water; and, as will be noticed from the description above, these two discharge orifices are at different levels.

As the escape passage from the discharge pipe C is restricted, the escape of the vapor is slow as compared with what it would be if there should be a free escape passage of the full capacity of the discharge pipe. Moreover, as the escape passage from the discharge pipe C is at one side thereof, it is out of the direct path of the hot water downward to the trap at the lower or discharge end of the discharge pipe. When the trap at the discharge end of the discharge pipe is formed by a check valve, the hot water collects until the column of water is sufficient to open the check valve and discharge itself. In this way the water of condensation is discharged automatically and certainly whenever it collects in the cylinder in sufficient quantities to rise above the inlet end of the discharge pipe. The cylinder is kept substantially free of water and substantially its entire surface is utilized for the purpose of heating, the steam admitted into the cylinder having access to substantially every part of the surface of the inside of the cylinder. The restricted passage or opening in the escape pipe may be varied in size according to the conditions under which the machine is operated.

By trapping the discharge end of the discharge pipe C of each drying or heating cylinder separately, the entrance of steam or water through the discharge pipe is prevented; for even if the water should all be discharged from one cylinder and the supply steam admitted to the common drain pipe K, the traps upon the discharge pipes of the other cylinders would prevent the pressure in the drain pipe from extending into their discharge pipes. This trapping of each discharge pipe separately is one feature of this invention.

The operation of the check valve and controlling device shown in Fig. 3 is to enable the discharge of water from the discharge pipe of any particular cylinder to be regulated according to the amount of hot water collecting in that cylinder, and thus to prevent the lower end of the discharge pipe from being entirely emptied of water, as it might be if no controlling device were used and the system were run under pressure. The different drying cylinders of a series employed to dry paper have a different rate of condensation, for the work performed by each cylinder is governed by the location of the cylinder; that is to say, the cylinders next to the wet end or where the pulp comes to the dryers, have to do considerably more work than the cylinder next to the calender end. By graduating or controlling the quantity of water that flows from each discharge pipe, the steam is prevented from passing from that discharge pipe into the common drain pipe. When this regulating device is not used and there should happen to be an excess of steam pressure in the drying cylinder, the steam would be blown right through the discharge trap or valve.

The escape pipes E, from the different drying cylinders, may all be connected with a single exhauster, as shown in Fig. 1, and the air pipes H may also be connected with a single exhauster. In some cases it may be expedient to have a single exhauster with which all the escape pipes and all the air pipes are connected.

If the steam is supplied to each drying or heating cylinder at a pressure above the atmosphere always sufficient to force the air and water out of the cylinder against the atmospheric pressure, the exhausters are not necessary.

This arrangement when used with the drying cylinders of a paper machine is said to result in great economy in the operation of that machine. It makes it possible to run the machine efficiently with supply steam at atmospheric pressure or a pressure below the atmosphere. Hence the drying cylinders can be supplied with exhaust steam from an engine or other source, and the work accomplished by means of steam which would otherwise be wasted.

The water of condensation and the air are said to be removed from the cylinders as effectively and thoroughly when the steam is under a pressure less than that of the atmosphere as when it is above. Substantially the entire interior surface of each cylinder is in active and constant operation in the work of heating or drying. Under these conditions a supply of exhaust steam under a pressure less than that of the atmosphere will in many cases furnish all the heat required, and, it is claimed, will accomplish better and more uniform results than have been accomplished without this improvement by a supply of steam directly from the boiler under a considerable degree of pressure. In this way a large saving in fuel is secured. It also secures uniformity and certainty of operation not possible with former drying or heating cylinders. The accumulation of air and water in the cylinder is prevented. The space within the cylinder to which the steam has access is practically constant. This being so, and it being comparatively easy to regulate the quantity of steam supplied to the cylinder, the cylinder can be kept at a uniform degree of temperature, or its temperature can be regulated as may be desired.

When such machines are used without the application of such a device the water and air accumulate in the cylinder and are present in different quantities at different times, and thus cause a constant variation in the temperature of the cylinder not in any way under the control of the operator. This is a serious defect.

Antwerp International Exhibition.

The awards in Group 3, Class XI. (typography, lithography and paper industry), at the Antwerp International Exposition to exhibitors from the United States were as follows:

DIPLOMA OF HONOR:

1. American Fine Arts Company.
2. Franklin Engraving and Electrotype Company.
3. United States Government.

DIPLOMA FOR GOLD MEDAL:

1. Chicago *Herald*.
2. Chicago *Tribune*.
3. *Inland Architect*.
4. *Youth's Companion*.

DIPLOMA FOR SILVER MEDAL:

1. *American Mail and Export Journal*.
2. Collective Newspaper Exhibit.
3. *Footlight Favorites*.
4. *Ink Fiend*.
5. G. W. Prouty & Co.
6. Scott Stamp and Coin Company, Limited.

DIPLOMA FOR BRONZE MEDAL:

1. *American Engineer and Railroad Journal*.

HONORABLE MENTION:

1. *Boots and Shoes' Weekly*.
2. *Wonderful Chicago*.

New Inventions—LV.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

BY GEO. DAMON RICE.

A new kind of wood pulp yarn, resembling cotton very closely, is being intfoduced. Cotton itself is not costly when compared with wool, worsted or silk, and can be obtained for about 9 cents a pound in the raw state, and when made into yarns the cost is not then very high. Even if cheap, however, there is an opportunity for a substitute, provided it is cheaper than the cotton and is in the main as good. It is claimed that the wood pulp yarns which are now being experimented with are not only much cheaper than cotton yarns, but that they are just as good in appearance, softness, strength, lustre and general conditions.

The wood of the spruce or pine is used, and is defibrated, after which it is disintegrated thoroughly and given a good bleaching. Much depends upon the latter process, for it is essential that the stock shall be white as the genuine cotton material. There are plenty of bleaching ingredients, and some are strong enough to bleach a board white. Thus far the bleaching compounds have consisted of hot solutions of bisulphate of soda and chloride of lime. After bleaching the subdued pulp the cellulose is treated with a compound of chloride of zinc, castor oil and gelatine, resulting in the formation of a paste, which is reduced to strands and rubbed into threads.

Two or three different styles of mechanisms have been employed in the process of preparing the strands, the most successful of which is shown in the drawing.

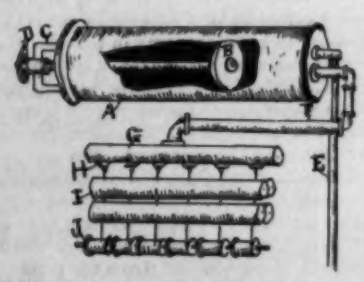


FIG. 1.—REDUCING THE PULP TO THREADS.

In this drawing the working parts only are presented, consisting of the copper cylinder A, the piston and head B, the bearing C and the wheel D. The paste or pulp is run from the preparation tank through the pipe E into the cylinder as represented. The cylinder is always filled at a time when the piston head B is away back toward the bearing C. This bearing is threaded and so is the piston rod. Hence, when the attendant turns the wheel D the piston moves forward, carrying with it the piston head, and the latter forces the pulp along slowly and gradually. The cylinder being full in front of the piston head, it follows that the pulp must seek an outlet. This outlet is through the pipe F, whence the pulp is forced into the cylinder G, and as this cylinder is furnished with tubes set at regular intervals and marked H the pulp passes through these and emerges from each tube in the form of a strand, rounded and substantial. Immediately the strands are taken up by the series of rubbing rollers I, which are worked by an eccentric, and the strands receive a hard rubbing, thus condensing them and putting on the finishing touches. From the rubbing rolls the strands of partly twisted yarns pass to the spools or bobbins J and are wound up. Of course all of these cylinders and rolls move in bearings, but these are not shown in the cut.

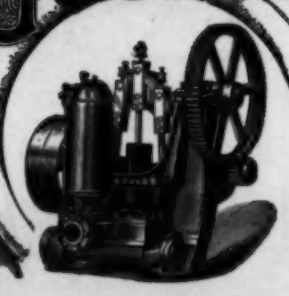
FIG. 2.—THE YARN ENLARGED.

In order to show the difference between the real and the artificial yarns the cuts in Fig. 2 are given, in which enlarged samples of cotton and pulp threads are presented.

Under the naked eye the pulp thread differs very little in appearance from the real cotton. It possesses practically all of the features of a pure cotton thread. It is white and soft; but when compared beneath a strong microscope a difference is noticed. The fine fuzzy and loose fibres so prominent in cotton threads are missing in the pulp kind; but this does not hurt the value of the latter. The pulp thread also appears harder and smoother under the glass, and that peculiar twist character of the cotton thread is also missing in the pulp strand. These features do not mar the practicability of the pulp yarns for use in making cotton fabrics. So far as dyeing is concerned the pulp yarns are all right. They will dye well and hold the colors. It is presumed that the plan of combining the pulp yarns with certain proportions of pure cotton will be adopted when the operations are so far advanced as to permit of practical use.

A half hour's work every Saturday will keep shafting in good condition, add to the neat appearance of any shop and give the men an incentive to keep the other machinery clean also. It will also be well to have the bearings themselves attended to, and while with the reservoirs and oil cups in common use they do not need weekly oilings, these should be kept filled at all times, as too much dependence on cups that are empty means hot bearings.

GOULDS PUMPS Are Better



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Is acknowledged the most economical type Boiler Feeder in use.
Goulds Triplex Power Pump is the most efficient of this class.
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Manufacturers of PUMPS and HYDRAULIC MACHINERY,
Works & Main Offices: Seneca Falls, N. Y., U. S. A. Warerooms: 16 Murray St., New York City,
Or Nearest Branch Agency—THE GOULD CO., 22 and 24 North Canal St., Chicago, Ill.
SMITH & WINCHESTER CO., 19 to 27 Wendell St., Boston, Mass. WOODS & LITTLE, 217 & 214 Market St., San Francisco, Cal.
R. O. BELOIN MFG. CO., Eighth & St. Charles Streets, St. Louis, Mo. L. M. BATES, 321 Vine Street, Philadelphia, Pa.

TRADE MARK

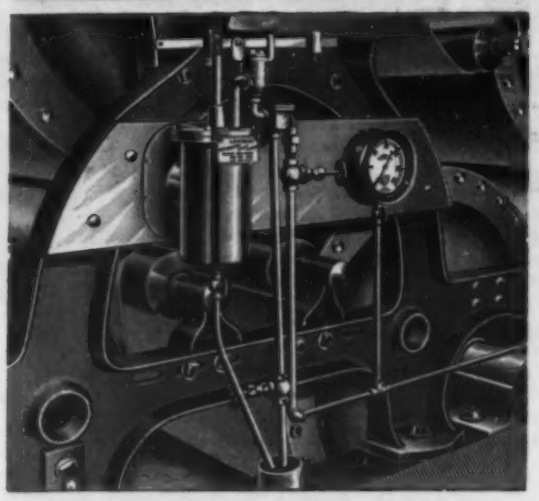
AJAX ANTI-ACID METAL,

FOR THE RESISTANCE OF ACIDS AND ALKALIES,
ESPECIALLY ADAPTED FOR
Digesters, Sulphite Machinery, &c., &c. We sell the Metal in INGOTS, furnish CASTINGS, any size as per patterns, and COCKS, VALVES and FITTINGS of every description.
THE AJAX METAL CO., INCORPORATED, PHILADELPHIA, U. S. A.
WE INVITE CORRESPONDENCE.

A NEW "CORLISS" ENGINE.
Embodying many marked IMPROVEMENTS,
Resulting in the production of the MOST EFFICIENT And ECONOMICAL POWER in the World!

THE "FISHKILL CORLISS" ENGINE
Has the indorsement of many of the leading Manufacturers and great Corporations of the United States, as well as high Testimonials from eminent Engineers.
Also Boilers, Shafting, Pulleys and everything necessary for a complete Steam Power Plant.

LOWDEN'S AUTOMATIC STEAM PRESSURE REGULATOR.



THESE Regulators are used by the largest manufacturers in the country on their paper machines and on their rotary bleachers. We refer to the following paper makers by permission, from the majority of whom we hold the strongest of commendatory letters:

S. D. WARREN & Co.,		Cumberland Mills, Me.
WINNIPISEOGEE PAPER Co.,	3 Regulators,	Franklin, N. H.
W. T. BARBER & Co.,		Bennington, Vt.
NONOTUCK PAPER Co.,	4 Regulators,	Holyoke, Mass.
FRANKLIN PAPER Co.,	2 "	" "
GEO. R. DICKINSON PAPER Co.,	2 "	" "
WHITING PAPER Co.,		" "
ALBION PAPER Co.,		" "
CROCKER MFG. Co.,	5 Regulators,	" "
NORMAN PAPER Co.,	4 "	" "
WAUREGAN PAPER Co.,	2 "	" "
MONTAGUE PAPER Co.,	3 "	Turner's Falls, Mass.
JAMES RAMAGE PAPER Co.,	2 "	Monroe Bridge, Mass.
BADEN PAPER Co.,		Lawrence, Mass.
DENVER PAPER Co.,	3 Regulators,	Denver, Col.
PLATTE RIVER PAPER Co.,	2 "	" "
MARTIN & WM. H. NIXON PAPER Co.,	6 "	Philadelphia, Pa.
JOHN LANG,	2 "	" "

Send for Descriptive Circular with Full Information.

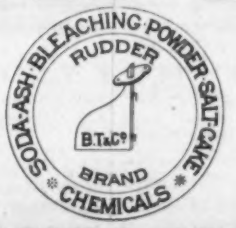
JAMES J. LOWDEN,
PATENTEE AND SOLE PROPRIETOR,
37 LANCASTER STREET, - - - BOSTON, MASS.

ALUM! THE MERRIMAC POROUS ALUM is unsurpassed for purity and good results.
All other grades of Alum for paper makers' use and for filtering purposes. Address
MERRIMAC CHEMICAL CO., 13 Pearl Street, Boston.

Wood Pulp, Soda AND Sulphite,
IMPORTED BY
G. RAU, TIMES BUILDING, New York.
SOLE AGENT FOR THE U. S. AND CANADA:
ROZÈS AINÉ & FRÈRES, Agen,
Well-known Packers of Linens and Cottons.

HUGHES BROTHERS,
Nos. 62, 64 & 66 NORTH SECOND STREET, BROOKLYN, E. D., NEW YORK.
(Three Blocks from Grand Street Ferry, Brooklyn Side.)
IMPORTERS AND PACKERS OF PAPER STOCK,
AND DEALERS IN PAPER MAKERS' SUPPLIES.
Special attention called to Our Own Packing.

"RUDDER" BRAND



PURE AMMONIA-SODA ALKALI
AND
HIGH STRENGTH BLEACHING POWDER
ARE THE BEST FOR PAPER MAKERS' USE.
Consignments regularly received at all Ports.
AMERICAN OFFICE: 66 BROAD STREET, NEW YORK.
BOWMAN, THOMPSON & CO., Ltd., NORTHWICH, ENGLAND.

AMERICAN STRAWBOARD CO.
ORGANIZED JULY 1, 1892. CAPITAL, $6,000,000.
Manufacturers of Straw Boards, Pulp Lined Boards,
Lined Straw Boards, Combination Boards, Binders' Boards,
'LIGNISTRA." Friction Boards, Building Board, Plain Board, Tarred Board, Waterproof Boards, Barrel Layers, Peach Baskets, Egg Cases and Fillers.
General Office, PULLMAN BUILDING, CHICAGO.
AGENCIES: New York, 102, 104, 106 Wooster St. Boston, 46 Federal St.
Philadelphia, 121-127 N. Fourth St. Cincinnati, 101-103 Walnut St.
Chicago, 152-153 Michigan Ave.

EAGLE BRAND THE BEST
NO TAR. ROOFING NO TAR.
It is superior to any other Roofing and unequaled for House, Barn, Factory or Outbuildings; it costs half the price of shingles, tin or iron; it is ready for use and easily applied by anyone; it is the best roofing in the market in durability. Send for estimate and state size of roof.
RUBBER PAINT.
The best known Paint in the world for Tin, Iron or Shingle Roofs, Fences, sides of Barns and Outbuildings; it costs only 60 cents per gallon in barrel lots, or $4.50 for a 5-gallon tub. Color, dark red. It will stop leaks in tin or iron roofs that will last for years; it is guaranteed not to peel, crack, scale nor wash off and it's fireproof against sparks. TRY IT.
SHEATHING PAPER.—900 square feet, $3.00; keeps buildings cool in summer, warm in winter.
EXCELSIOR PAINT AND ROOFING CO., 155 DUANE STREET, NEW YORK, N. Y.

Beware of Imitations.
BEST IN THE WORLD!
Called the STANDARD, as it is the PACKING by which others are compared.
THE IMPROVED JENKINS BROS. VALVES
Stamped with our Trade Mark
ARE GENUINE.
JENKINS BROS., 71 John St., New York. 105 Milk St., Boston. 21 North Fifth St., Philadelphia. 31 North Canal St., Chicago.

AMERICAN STAVE & COOPERAGE CO.,
Manufacturers of Cedar, Cypress, Pine or Oak
Round and Square Tanks
OF ANY SHAPE OR CAPACITY.
OFFICES:
Broad and Beaver Sts., NEW YORK. 160 State St., BOSTON.
Illustrated Catalogue upon application.

Imports and Exports.

IMPORTS AT NEW YORK.

FOR THE WEEK ENDED OCTOBER 12, 1894.

An. Colors..	617	$40,973	Paper.....	433	$24,007
Alum.....	—	—	Steel Pens...	3	2,009
Alum's Cake	—	—	Stationery...	21	1,158
Bl. Powders	794	15,151	Slate Pencils	12	297
Soda Ash...	5,509	16,913	Clay.....	—	8,283
Soda, Caus.	1,125	14,335	J'te B'ts, &c.	—	—
Soda, Sal....	—	—	P. Hangings	17	340
Soda, Hypo.	—	—	P'p'r Stock..	2,094	16,075
Ultramarine	—	—	Terra Alba..	—	—
Books.....	—	—	Waste.....	121	25,975
Newspapers.	230	7,721	Wood Pulp..	73	562
Engravings.	85	7,325			
Ink.....	279	2,055		—	—
Lead Pencils	9	1,065	Totals....	11,346	184,144

Imports General Merchandise for the week ended October 12, 1894..... $5,825,999

IMPORTS OF PAPER STOCK AT NEW YORK.

FROM JANUARY 1 TO OCTOBER 16, 1894.

Whence Imported.	*Rags.*	*Old Papers.*	*Chemical Fibre.*	*Ground Wood.*	*Manilla Stock.*
	Bales.	Bales.	Tons.	Tons.	Bales.
Alexandria...	1,249	....	....	....	....
Antwerp.....	1,606	362	766	....	13,351
Aspinwall	90	....	....	....	....
Bordeaux.....	654	....	....	....	....
Bremen	672	95	6	....	6,678
Bristol.....	....	....	....	....	3,651
Buenos Ayres.	157	....	....	....	....
Calcutta.....	....	....	....	....	3,051
Cent. America	130	....	....	....	....
Christiania....	....	....	586	....	749
Copenhagen..	790	....	1,226	....	1,929
Dublin.....	....	186	....	....	....
Dundee.....	....	....	....	....	882
Dunedin.....	....	....	....	....	183
Fiume.....	....	....	90	....	....
Geestemunde.	232	....	....	....	1,809
Genoa.....	....	....	....	....	4,350
Glasgow.....	594	77	13	....	583
Gothenburg ..	91	....	107	....	....
Hamburg.....	1,980	276	385	....	4,005
Hamilton.....	....	....	....	....	42
Hiogo.....	9,001	....	....	....	....
Hong Kong...	48	....	....	....	....
Hull.....a	2,852	185	1,164	....	15,775
Kobe.....	84,995	....	....	....	....
Leghorn.....	2,394	....	....	....	....
Leith.....	....	159	....	....	138
Liverpool.....	1,372	880	....	....	23,555
London.....	5,043	2,131	20	....	11,016
Marseilles	406	....	....	....	466
Nassau	48	....	....	....	15
Newcastle	....	286	....	....	4,187
Rio.....	26	....	....	....	....
Rotterdam....	2,262	119	717	....	9,630
Southampton.	....	....	....	....	160
Stettin.....	3,905	....	760	....	8,391
Trieste.....	....	....	49	....	....

a. Including 347 bales cotton waste.

NEW YORK IMPORTS.

FROM OCTOBER 9 TO OCTOBER 16, 1894.

Paper Stock.

E. Hatton & Co., Powderhorn, Antwerp, 281 bs. rags.
Train, Smith & Co., by same, 704 bs. bagging.
James Pirnie, by same, 258 bs. bagging.
Perkins, Goodwin & Co., Marengo, Antwerp, 47 tons chemical fibre.
Lewy Brothers, by same, 318 bs. bagging.
Lewy Brothers, Galileo, Hull, 319 bs. bagging.
G. Rau, by same, 25 tons chemical fibre.
Train, Smith & Co., Nomadic, Liverpool, 306 bs. manillas.
J. W. Mason & Co., by same, 59 bs. manillas.
Darmstadt & Scott, by same, 16 bs. rags.
James Pirnie, by same, 331 bs. bagging.
R. H. Overton & Son, Lydian Monarch, London, 85 bs. papers.
Lewy Brothers, by same, 165 bs. rags.
G. Rau, Greece, London, 20 bs. rags.
James Pirnie, by same, 206 bs. bagging.
James Pirnie, Europe, London, 308 bs. bagging.
Train, Smith & Co., Marengo, Newcastle, 295 bs. manillas.

Paper.

Beecker & Frank, Teutonic, Liverpool, 5 cs.
Dingelstedt & Co., by same, 2 cs.
Dinglestedt & Co., Scandia, Hamburg, 5 cs.
W. H. S. Lloyd, Paris, London, 2 cs. hangings.
J. B. Vandergrift & Co., Augusta Victoria, Hamburg, 32 bs.
G. J. Kraft, Campania, Liverpool, 6 cs.
Dennison Manufacturing Company, by same, 48 bs.
Rogers Manifold and Carbon Paper Company, by same, 4 cs.
G. W. Sheldon & Co., by same, 3 cs.
C. D. Stone & Co., Marengo, Antwerp, 40 cs.
E. Fougera & Co., La Champagne, Havre, 33 cs.
A. V. Benoit, by same, 34 cs.
G. Gennert, Sparndam, Rotterdam, 7 cs.
Max Adler, by same, 21 bs.
J. W. Cocksedge, by same, 2 cs.
L. De Jonge & Co., by same, 78 cs.
Hermann Lips, by same, 2 cs.
H. S. Leclercq & Co., by same, 13 cs.
Kupfer Brothers, by same, 10 cs.
E. Kimpton, Ethiopia, Glasgow, 9 cs.

BOSTON IMPORTS.

FROM OCTOBER 11 TO OCTOBER 17, 1894, INCLUSIVE.

Paper, &c.

Wm. Guild & Co., Catalonia, Liverpool, 6 bs. periodicals.
Dennison Manufacturing Company, by same, 54 pkgs. tissue paper.
W. A. Nosworthy, by same, 33 cs. paper.
Hooper, Lewis & Co., Norse King, Antwerp, 2 cs. playing cards.
C. Flood & Son, Ottoman, Liverpool, 5 cs. paper.
Jones, McDuffee & Stratton, by same, 1 cs. paper.

Paper Stock.

Train, Smith & Co., Norse King, Antwerp, 579 bs. rags, 609 bs. flax waste.
Castle & Gottheil, by same, 39 bs. rags.
Horace Dutton & Co., by same, 352 bs. rags, 178 flax waste.
Geo. W. Millar & Co., by same, 145 bs. manillas.
C. A. Cheney, Philadelphian, Liverpool, 261 bs. rags.
Train, Smith & Co., Virginian, Liverpool, 160 bs. rags.
Wheelwright Paper Company, by same, 260 bs. waste paper.
Horace Dutton & Co., by same, 124 bs. rags.
C. A. Cheney, Ottoman, Liverpool, 161 bs. rags, 156 bs. manillas.
Train, Smith & Co., Kansas, Liverpool, 156 bs. rags, 41 bs. manillas.
R. H. Overton & Son, by same, 78 bs. manillas.
Horace Dutton & Co., Micmac, Swansea, 115 coils manillas.
True & McClelland, Scandinavian, Glasgow, 460 bs. waste paper.

Wood Fibre.

C. D. Brown & Co., Hungaria, Hamburg, 127 bs.

Sizing.

C. A. Cheney, Ottoman, Liverpool, 167 bags.
Thomas Groom & Co., by same, 80 bags.
E. W. McClintock, Catalonia, Liverpool, 95 bags.

Bleaching Powder.

J. L. & D. S. Riker, Philadelphian, Liverpool, 364 cks.
Bowman, Thompson & Co., by same, 25 cks.
Baring Brothers & Co., by same, 29 cks.
Mason, Chapin & Co., Norse King, Antwerp, 50 cks.
J. L. & D. S. Riker, Ottoman, Liverpool, 227 cks.
J. L. & D. S. Riker, Kansas, Liverpool, 175 cks.

Caustic Soda.

Edward Hill's Sons & Co., Kansas, Liverpool, 175 drums.
R. F. Downing & Co., by same, 100 drums.

Soda Ash.

Wing & Evans, Catalonia, Liverpool, 64 cks.
Wing & Evans, Philadelphian, Liverpool, 800 bags.
Morey & Co., by same, 46 cks.
Baring Brothers & Co., by same, 34 cks.
Jerome Marble & Co., by same, 22 cks.
Warren & Co., Ottoman, Liverpool, 96 bags.
Warren & Co., Kansas, Liverpool, 108 cks.

Soda Crystals.

Warren & Co., Kansas, Liverpool, 140 bbls.
Jerome Marble & Co., Philadelphian, Liverpool, 140 bbls.
W. H. Lincoln & Co., by same, 20 bbls.

Crude Sulphur.

Linder & Meyer, Philadelphian, Liverpool, 3,337 bags.

PHILADELPHIA IMPORTS.

FOR THE WEEK ENDED OCTOBER 13, 1894.

Paper Stock.

Order, Corean, Liverpool, 365 bs. bagging.

Soda Ash.

Brown Brothers & Co., Southwark, London, 70 tcs., 867 bags.

Bleaching Powder.

Order, Pennsylvania, Antwerp, 59 cks.
Same, Corean, Liverpool, 56 pkgs.
J. L. & D. S. Riker, by same, 133 tons.

Salt Cake.

Brown Brothers & Co., Southwark, Liverpool, 74 cks.

EXPORTS of Paper, &c., from New York for the Week Ended October 16, 1894.

BOOKS, cases, to Southampton, 6; Mexico, 15; Central America, 9; Argentine Republic, 1; Havre, 25; Colombia, 12; Antwerp, 2; Amsterdam, 1; British West Indies, 3; Bolivia, 56; Beyrout, 1; Chili, 1; Genoa, 2; Hamburg, 15; London, 16; Venezuela, 5; Bremen, 4.

PAPER, to Cuba, 467 pkgs.; British West Indies, 568 pkgs.; Central America, 128 pkgs.; Liverpool, 115 cs.; Mexico, 10 pkgs; Venezuela, 20 pkgs.; Hamburg, 44 cs. and hangings, 14 cs.; Newfoundland, 26 bdls.; Colombia, 98 pkgs., 7 cs.; Dutch West Indies, 3 pkgs.; Danish West Indies, 17 pkgs.; Antwerp, 214 cs.; Bremerhaven, 40 cs.; Brazil, 223 pkgs.; French West Indies, 4 pkgs.; Hull, 5 cs.; Leeds, 230 pkgs.; Leith, 77 pkgs.; Peru, 1 cs.; Rotterdam, 6 cs. and hangings 9 cs.

STATIONERY, cases, to Cuba, 3; Central America, 18; Colombia, 26; Venezuela, 9; Nova Scotia, 1; Newfoundland, 2; Antwerp, 1; Argentine Republic, 1; Port Said, 2; Rotterdam, 4; Spanish possessions in Africa, 3; British West Indies, 2; British Honduras, 1; Brazil, 1; Ecuador, 1; Chili, 1; French West Indies, 2; Hull, 1; Hamburg, 1; Mexico, 14; Peru, 8.

AGGREGATES AND VALUES.

Paper, reams.....	—	—
Paper, pkgs.....	2,052	$8,923
Paper, cases.....	82	1,416
Books, cases.....	160	13,900
Stationery, cases.....	145	7,922
Rosin, bbls.....	4,530	11,893
Totals.....	6,970	$43,554

Exports General Merchandise for the week ended October 16, 1894..... $6,508,617

TRAIN, SMITH & CO.,
IMPORTERS OF AND DEALERS IN
—ALL DESCRIPTIONS OF—
Paper Makers' Supplies,
24 FEDERAL STREET, BOSTON.
BRANCH OFFICES: 140 NASSAU STREET, NEW YORK. 14, 16, 18 & 20 ST. MARY AXE, E. C., LONDON. EDMUND ST. CHAMBERS, LIVERPOOL.

WM. J. CORBETT & CO.,
WHOLESALE DEALERS IN AND PACKERS OF
Woolen Rags and Paper Makers' Supplies,
86, 88 & 90 COVE ST., BOSTON, MASS.
WOOLEN RAGS GRADED IN COLORS AND QUALITY.
OUR SPECIALTIES: "EXCELSIOR" AND "STAR" PACKINGS.

ESTABLISHED 1865.
DARMSTADT & SCOTT,
—IMPORTERS AND PACKERS OF—
PAPER STOCK.
Offices: 257 Front Street. Packing House: 312 Water Street, New York.
☞ SPECIAL ATTENTION CALLED TO OUR OWN PACKING.

F. BREDT & CO.,
No. 194 Fulton Street, SOLE AGENTS FOR New York City, U. S. A.
JOSEPH PORRITT & SONS'
TRADE MARK. ENGLISH FELTINGS.
ALSO IMPORTERS AND DEALERS IN
MARINE BLUE (Aniline) for News Paper Mills,
Jacketing, Roll Cloth, Double Extra Canvas, Ultramarine Blue.

GRIFFIN & LITTLE, PAPER MILL CHEMISTS,
Office and Laboratory: 103 Milk Street, Boston.
EXPERTS IN THE SULPHITE PROCESS AND ALL CHEMICAL MATTERS PERTAINING TO THE MANUFACTURE OF PULP AND PAPER.

TRUE & McCLELLAND,
(LATE E. A. TRUE & CO.
PACKERS AND IMPORTERS OF
Paper Stock and Wastes,
OFFICE: 64 FEDERAL STREET, BOSTON.
Foreign Packing Branches: 19 Corporation St., Manchester; 97 Park St., Liverpool.

A. WERTHEIM & CO.,
HAMBURG, GERMANY,
Exporters of all Grades of Sulphite and Soda Pulps.
SIGMUND GOLDMAN, Agent for the United States and Canada,
BENNETT BUILDING, 99 NASSAU STREET, NEW YORK.

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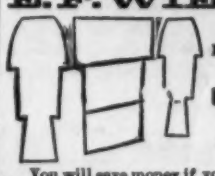
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NEW YORK: SATURDAY, OCTOBER 20, 1894.

THE CHEMISTRY OF PAPER MAKING is now on the market; octavo, 532 pages, cloth, $5.00, postpaid. Every reader of THE PAPER TRADE JOURNAL interested in the subject could not make a better investment of the money. Particulars in another column.

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ONE of two things is certainly true of the silver question: either the country was wholly wrong in 1893 or it is so today. When the purchasing clause of the Sherman act was repealed the sound, honest, able sentiment of the country, or what appeared to be such, applauded the act and placed in evidence a most emphatic protest against the free coinage of silver. The people were not necessarily against a bimetallic element or standard in our currency, but they were, or permitted it to be thought that they were, unwilling to advocate the desirability of the United States launching out alone in such an experiment with every Occidental nation against her.

BIMETALLISM seems to have been thrown aside, however, and from unexpected sources come startling and extreme views favoring free silver. We are quite unable, considering the present commercial value of silver and the already debased character of our silver dollars, to see that free silver coinage occupies a bit higher position than fiat paper money, and whoever advocates it can justly claim no higher place as a financier than the "'wayback greenbacker." It is a matter of indifference to us who advocates this tricky meddling with the national finances; it is culpable and deserves rebuke. It is indeed a sorry spectacle when the money of a great nation becomes such a trifling subject that every aspirant to public favor hopes to clinch popular opinion by offering some financial scheme usually visionary and often diabolical and discreditable in its lack of honest morality. Stop talking about cheap money!

THIS reminds us that the annual convention of American bankers was in session at Baltimore last week. One subject for discussion at the meeting was the devising of some feasible plan for imparting to our national bank note issue more elasticity than it now possesses—that is, to give it an expanding and contracting power which shall work in harmony with the business needs of the nation. It is needless to say that every level-headed man of affairs regards with favor the national banking system of the United States, and has no desire to change it if the one defect mentioned above can be remedied. The bank note issue of the country is limited by law and can be expanded only by complying with certain formalities requiring too often a perilous expenditure of time. It is also a fact that the bonds on which the issue is based are becoming gradually unavailable by their own legal limitations for a basis of bank note issue. It was, therefore, timely and vitally important that the matter should receive the serious consideration of the only body of men really qualified to settle upon a solution of the difficulty. The results of the deliberations of the association on this question are embodied in a proposed petition to Congress, the text of which will be found in another column.

TRADE reports from various sections of the country give evidence of gradual improvement in general trade. In manufacturing, the iron industry has been called "the pulse of trade," and if this is its proper function it is presenting favorable symptoms of a return to normal and healthy conditions. In the regular bank statements also there is food for encouragement in the weekly gains of the surplus, and the steadily increasing amount of deposits. The difficulty of loaning the surplus remains a stagnating factor not easily accounted for even by bankers themselves, unless it arises from the unusually close scrutiny given every sort of paper offered. In the long run this vigilance will prove beneficial in keeping down the speculative fever, and preventing men from embarking in risky operations for the sake of possible abnormal gains. As yet there appears to be little disposition to enter upon such undertakings, the general tendency seeming toward sound methods with slower returns rather than the harassing anxieties of riskier conditions.

AN explanation of the gold exports which began on a small scale a week or two ago is offered in the fact that the shipments were mainly to Austria in payment for goods bought, it having been thought easier and cheaper to ship the gold than to buy exchange. Austria is a monometallic country and a great absorber of the yellow metal, and as her fancy goods—small notions, glass, pottery, &c.—find a large market here, a reasonable explanation of the recent shipments of gold thither is given. Whether the exports of gold will continue and grow in volume does not seem to trouble anyone much. October railroad earnings are looking up, and although September results were considered highly encouraging, there is strong promise of better returns for the present month. We note these general tendencies as bearing favorably upon every department of trade, including paper. The very low ebb reached a few months ago affected every branch of industrial endeavor equally, or nearly so, and whatever revival takes place must be of the same general character. No branch of manufacture enters more closely and minutely into the everyday necessities of business and the people than paper making, and we therefore look for a greater proportionate prosperity, if not a speedier recovery, in this, our own peculiar department, than in almost any other.

Watermarks.

BY DANDY.

The front and rear walls of the Morse Building are cracked and some people blame the contractors who are erecting the "'steen" story building next to it. Others, however, do not hold to this opinion, and I have been handed the following: "Please deny the rumors current that the cracks in the walls of the Morse Building were caused by the weights of Messrs. Lathrop, Gladwin, Bartow and Kingsland, who occupy that side of the building or that the Building Department ordered these heavyweights to move to the other end of the lot."

The denial is made with pleasure, and I may add that no regulation has been made that if these gentlemen retain their present offices they are to reduce their weight by training. 'Tis false, as is also any statement that "Danny" Hicks has been importuned to hold down the Beekman street side of the building.

Sometimes there is a good deal of fun at creditors' meetings, even though the proper aspects of them are rather funereal.

In the protracted one this week it was stated that all of the members of the unfortunate corporation, of which a well-known and happy Philadelphia paper maker was the largest creditor save one, had contributed cash or its equivalent to the common capital. This one, it was generally supposed, had induced the Philadelphian to put his account with the corporation.

Some of the creditors were talking the matter over and one was saying, "Well, there's Bingham; he put in $50,000, Batelle put in $12,000, Briggs put in $5,000, and Bergen—let me see, what did he put in?"

"Why," said one of the crowd, "he put in Nixon." The assembly broke up.

The fellow who was "put in" was met just after the meeting, which, by the way, he and a number of others did not attend, and he was told:

"They want you upstairs in the meeting room."

"What for?"

"You've been appointed on a committee."

"What's the committee going to do?"

"Look into this thing."

"Oh! well, I've looked into this thing all I want to," and "he winked his other eye."

A confidential bookkeeper of the Cordage Trust agreed for a consideration to divulge to a stockholder all the inner workings of the scheme. The bookkeeper did this, part of the information being the list of dividends declared, which were as follows: March 20, 1888, $237,000; September 27, 1889, $750,000; January 8, 1890, $100,000; April 3, 1890, $100,000; April 3, 1891, $400,000; July 1, 1891, $260,000; November 1, 1891, $350,000.

He also gave the stockholder a statement of the profit and loss account of the trust, which showed the total loss of the corporation to be $3,017,992.42. The account is as follows: August 1, 1887, to December 31, 1887, profit, $237,313.57; January 1, 1888, to July 3, 1888, loss, $247,414.49; August 1, 1888, to July 31, 1889, profit, $869,259.34; August 1, 1889, to July 31, 1890, loss, $2,987,848.83.

The bookkeeper says that the stockholder agreed to give him $20,000 and to sell him 5,000 shares of cordage stock. He didn't give it to him, however, and the bookkeeper sued to enforce the alleged contract. His suit was dismissed and the case will now be taken to the appellate court.

Trade Talks.

John M. Blake, of James Lee & Co., United States Agents for the United Alkali Company, 72 Pine street, New York—We have noticed that some exports of caustic soda have been made from this country to England, but we do not think that it could possibly have any effect upon the foreign market, because it has not been sent out in sufficient quantities. We think that it has been only about a month or so since the first shipment was made, and it amounted to about 100 tons. If it should be exported in larger quantities we could not say what effect it might have. In fact, we do not know why it was exported. We have not ascertained, but presume that it was for some special purpose, which the exporters know more about than we do. At any rate, we are not lying awake nights thinking or worrying about it. So you want an explanation as to why it is that the United Alkali Company is today selling caustic soda for less money in the United States than to consumers in its own country, and how it can do so. The reason is very plain and the explanation very simple. England manufactures four times as much caustic soda as can be used in that country. The result is that there is a surplus not consumed, for which a market is sought elsewhere. Some of it comes to this country, and goes in a small quantity to the paper manufacturer, but largely to the soap maker. The paper maker uses soda ash. It is the same with other countries and other industries. They have a surplus, which they get rid of by selling abroad. It is the same in America. Go ask the American manufacturer why he sells American machinery in foreign markets for less than he furnishes it at home! Go to any of the large piano makers and compare their home price with the foreign price for the same instrument. The reason is the same. Many manufacturers produce in larger quantity than they can sell, and what is not used in their own country goes abroad and is sold in many cases far below what the same article brings right at home. This enables the manufacturer to keep his works going and his men employed, and the loss made by selling at reduced prices abroad does not cut a large path in his profits when the benefits are taken into account, for he in addition not only by overproduction has sufficient stock always on hand to meet competition at home, but he may by keeping on exporting sell at such a low cost as to finally drive all other competitors out of the foreign market, reserve it for himself, and finally be enabled to sell at a price which would be remunerative. It is the constant dropping which wears the stone, you know. This applies to the manufacture of caustic soda. Another reason why this is the case is because of the difference in freights to and from this country, being much smaller in the former than in the latter case. This is caused by the differences in the exports and imports of this country, the former being much larger than the latter, and the consequence is that as freights are scarce and vessels do not want to go back in ballast there is a regular scramble after cargoes. England regulates the price on caustic soda just as Hamburg regulates the price on sugar. We, as agents, are informed of the price at which to sell and that is all we have to do or know about the foreign market. Hamburg beet sugar regulates the market all over the world. As to American caustic soda in England, it must be remembered that the United Kingdom is the stronghold of the industry, and I would just as much think of going down here and attacking Fort William as to hope of making a breach in the English market with the American product. It is too much like attacking a man on his own dunghill.

Mr. Hill, of Edward Hill's Son & Co., United States Agents for the United Alkali Company, 25 Cedar street, New York—I have not seen the article to which you refer published in an English paper, wherein the question was asked of the United Alkali Company how it was that it could afford to sell caustic soda for less money in its own than in the American market. We do not know anything about the foreign market. We only have to do with the market in this country. We receive our instructions from the United Alkali Company, and are told at what prices to sell. There it ends. Although we have our offices here, we are as selling agents the employees or clerks of the home company, and as such have no right to talk for that company upon this question. It would probably not like it, and then again we know nothing about it and have nothing to say. No, we do not think it better not to know anything when the representative of a paper is around. We are simply not in a position to talk, because we do not know of anything to say, and if we did know of anything to say we would not say it, because we do not consider it advisable.

A gentleman so closely connected with the Solvay Process Company as to make his knowledge valuable and give his opinion weight, but who absolutely declined to allow his name to appear in connection with anything he said in relation to this topic, because, as he expressed it, "it would be undignified," and he did not believe in fighting his battles through a newspaper, said, when approached at his office in New York: "When the duty was taken off of caustic soda it gave the United Alkali Company an opportunity to attack the American manufacturer, which is the Solvay Process Company, the only manufacturer of that article in this country, and it directed its several agents here to reduce their prices even below the amount taken off by the duty. This has resulted in a bitter fight, of course, on the part of the Solvay Process Company to retain its trade as far as possible until the United Alkali Company cut the price down to an equivalent of £5 10s. in Liverpool, while it was selling to the English consumer its caustic soda at £8. These are about the figures. This gave the Solvay Process Company an opportunity to ship its product from America into Liverpool, where it is being shipped daily. The very ships which bring English caustic soda to this country take the caustic soda of the Solvay Process Company back to supply the English market. If you will read some of the English trade papers you will now find that it has stirred up some interest in Great Britain, and an editorial in a recent English paper asked for an explanation as to how it was that the United Alkali Company sold caustic soda so low in America and for so much in its home market. The fact is that the United Alkali Company has undertaken to shut the Solvay Process Company out of the American market, and now the latter has gone abroad and is competing with it on its own ground. This has resulted in a change of mind and change of heart on the part of the United Alkali Company and it has ceased its low offers in this country, and the market has assumed its normal condition. The Solvay Process Company believes in fighting the devil with his own weapons—with fire, not with ice."

Communications.

Low Prices.

Editor of The Paper Trade Journal:

Have the news paper manufacturers gone daft or what is the matter? I understand that the newspaper offices are besieged by paper manufacturers or their representatives begging for orders, and in some cases asking the newspaper publishers to make the price. If this continues I see no reason why 1½ cent per pound for news will look any cheaper to a publisher for 1895 than 2½ cents looked for 1894. Publishers are more afraid to make contracts at these low prices than in former years, when prices were 50 to 100 per cent. higher.

The reason for this is not far to seek, and is the fault wholly of the manufacturers. When a publisher, instead of having two or three manufacturers call on him (as in former years), finds himself fairly overrun with men anxious for a chance to bid, he concludes that papers are more plenty than in previous years, and doesn't hesitate to take advantage of the situation. It follows that the manufacturer now supplying the publisher, knowing the anxiety of other manufacturers to secure the order, is demoralized, fearing that if he loses his customer it will be difficult to fill the gap made by the loss of the order; and the new men bidding know that they must bid low to get under the manufacturer holding the order, as well as under the other eager bidders; it can only result in prices going all to pieces. It seems to the writer that there ought to be brains enough among the news paper manufacturers to find a way out of these difficulties, and would suggest that one step would be for, say, half a dozen news manufacturers to call a meeting in Boston or New York of all news manufacturers in the East, and see if this whole matter cannot be put on a business basis. S.

A Retrospect.

Editor of The Paper Trade Journal:

In a recent issue of a daily paper I saw a statement that the "paper and pulp mills located in the Fox River Valley, Wisconsin, had been bonded by a syndicate in the sum of $10,000,000." It served, even if my growing infirmities were not sufficiently in evidence, to remind me of the inevitable changes of the whirligig of time, which brings change to all things temporal. In the spring of 1876 I was called to Appleton, Wis., to superintend the building of the first paper mill to contain a Fourdrinier machine in the State. There was at that time a small mill making straw wrapping; also a ground wood pulp mill in Appleton, and at Menasha, a few miles below, there was a mill making news, having a cylinder machine.

These three mills represented the extent of the industry in the Fox River Valley at that time. The magnificent water power which had been created by the United States Government in building the inter-State canal to connect the Atlantic and Pacific through the chain of great lakes to the Gulf of Mexico via the Wisconsin River, had recently been completed through the Fox River Valley. The dams built at this point, at the outlet of the Lake Winnebago, made the available power very valuable, and some of the shrewd business men of this section were not slow to take advantage of it. The first paper mill was built by the Appleton Paper and Pulp Company. The site had been originally that of a saw mill, and later it had been converted into a ground wood pulp mill, and at the time referred to had a number of Ames wood pulp machines, making occasionally some pulp, but principally "kindling wood"—at least it would be considered little better at the present time. This property was converted into a one machine mill, having a Jordan engine and other improvements in use at that time, and the enterprise being successful from the start it gave the impetus to what since has become one of the most

prosperous paper making centres in the country.

By referring to the files of THE PAPER TRADE JOURNAL of that time you will find some reference to what the writer thought of the locality at that early day as a place to manufacture paper of the finer grades, and some of those same communications might be—in view of what has since transpired — interesting reading at this time. When I read the article spoken of in the beginning of this communication, that paper and pulp mills valued at $10,000,000 had grown up in this section, my mind naturally reverted to the time — eighteen years ago—when the entire region was little better than a wilderness. C.

Changes, Removals and New Firms.

Sullivan Cook, publisher, Hartford, Mich., has sold out.

Chicago, Ill., has a new humorous paper called *Uncle Sam*.

The *Herald*, Neepawa, Man., has suspended publication.

The *Democrat*, Fremont, Neb., has been sold to Colonel Killian.

Chicago, Ill., has a new journal called the *Business Law Weekly*.

Portland, Ind., has a new Granger newspaper called the *Inlander*.

The *Leader*, Rochester, N. H., has been sold to Wilbur L. Duntley.

T. E. Burdett, bookseller and stationer, Woodstock, Vt., has sold out.

Frank Walton, bookseller and stationer, Pocatello, Idaho, has sold out.

Elgin, Ill., has a new fraternal organ called the *Illinois Maccabee*.

Nichols & Blanton, publishers, Fulton, Mo., have dissolved partnership.

O. A. Brown, dealer in wall paper, &c., Plattsmouth, Neb., has sold out.

Duluth, Minn., has a new Sunday paper called *French's Sunday Forum*.

The *Inquirer*, Litchfield, Conn., has been sold to the Rev. Geo. B. Woodruff.

Fairhope, Ia., has a new paper called the *Courier*, edited by Edward Gaston.

Carley & Henderson, publishers, Victoria, B. C., have dissolved partnership.

New Westminster, B. C., has a new paper called the *Mainland Standard*.

Boston, Mass., has two new comic weekly papers, *Brother Jonathan* and *Fizz*.

Daniel T. Shea, Norwich, Conn., will open a new book and stationery store.

Goldendale, Wash., has a new weekly called *Klickitat County Agriculturalist*.

The Columbian History Company, publisher, Chicago, Ill. is closing out its business.

Grand Rapids, Mich., has a new paper called the *Arbitrator*, published by C. S. Young.

E. R. Paul, East Dubuque, Ill., has started in the book, stationery and news business.

Beardsley & Elwell, booksellers and stationers, Bridgeport, Conn., have dissolved partnership.

Hamlin & Graham, dealers in wall paper, Emporia, Kan., have been succeeded by J. B. Graham.

The Hummell Wall Paper Company, St. Louis, Mo., has been incorporated. Capital stock, $10,000.

The plant of the *Mining World*, Colorado Springs, Col., has been sold at auction to John Creswell.

The *Republican* Publishing Company, Coldwater, Mich., has been incorporated. Capital stock, $7,000.

The American Standard Publishing Company, Chicago, Ill., has been incorporated. Capital stock, $5,000.

L. P. Thayer, publisher of the *Herald and News*, West Randolph, Vt., has sold out to L. B. Johnson.

A new magazine entitled *Coaching* has been started at Philadelphia, Pa. It deals with equine subjects.

Atlanta, Ga., has a new monthly called *Justice*, published in the interest of the Federation of Trades.

Cleveland, Ohio, has a new class journal called *Woman's Voice*, published by the *Sun* and *Voice* Company.

D. H. Morrison, publisher of the *Star*, Grand Valley, Ont., has sold out to R. F. Taylor and J. A. N. Preston.

The National Paper and Supply Company, Elkhart, Ind., has been incorporated with a capital stock of $10,000.

Tuttle & Staples, booksellers and stationers, Little Falls, Minn., have been succeeded by H. B. Tuttle & Son.

George S. Whitney, bookseller and stationer, Faribault, Minn., has been succeeded by the Rev. M. White.

The Hub Bookbinding and Stationery Company has been organized at Kittery, Me., for the purpose of carrying on a book printing and stationery business with $100,000 capital stock. The officers are: President, Fred S. Browne; treasurer, Frank H. Little.

Timothy Haggerty, dealer in wall paper, &c., East Orange, N. J., has been succeeded by Edward E. Gibbens.

L. B. Noyes has sold his remaining interest in the *Eagle* Printing Company, Marinette, Wis., to Frank E. Noyes.

The Allen Printing Company, Seattle, Wash., has been incorporated with a capital stock of $10,000. E. C. Allen, P. L. Allen and S. M. Allen are the incorporators.

George Moore, formerly of the Lockwood Press and more recently of the *Mail and Express*, has opened a stationery and sporting goods house at Parry Sound, Ont.

The Fidelity Publishing Company, Chicago, Ill., has been incorporated with a capital stock of $20,000. Incorporators, R. L. La Fouche, J. H. Potter, L. L. Shaw.

The *Daily Despatch*, of Rat Portage, has been purchased by A. E. McDonald from H. B. Wilson, Jas. Skinner, and R. M. Wilson, the original promoters of the paper.

A new periodical, representing an important field of artistic endeavor is called the *Landscape Architect*, published by the Vista Publishing Company, Rochester, N. Y.

A Populist paper known as the *Commonweal* has been issued from the office of the *Independent* Publishing Company, Vineland, N. J. Carl Browne and J. J. Streeter are the proprietors.

A. Clapperton, of Clapperton & Wilson, dealers in wall paper, &c., Atlantic Highlands, N. J., has sold his interest to Mr. Wilson, and gone to Tarrytown, N. Y., to superintend the wall paper factory there.

Red Jacket, Mich., has a new paper called the *Finnish-American Law Journal*, devoted to the translation of laws and other matters of interest to the Finns, who have settled in large numbers in that part of the State.

Boston, Mass., is to have a new monthly magazine called the *Bostonian*. The editor will be Arthur Wellington Braley, and the publication will be largely devoted to the past and present interests of Massachusetts in general and Boston in particular.

The Merchants and Traders' Publishing Company has been incorporated to conduct the publishing and advertising business conducted by Robert Walker at 100 Nassau street, and of Barter Seagrave, of 220 Fourth avenue, New-York. Capital, $15,000. Directors, Robert Walker, Barter Seagrave, Henry J. Furlong, D. N. B. Sturgis and Wallace E. Carver, of New York city.

The Newton Falls Paper Company, Newton Falls, N. Y., has been incorporated. Capital, $200,000. The directors of the company are George A. Bagley, James L. Newton, Levi H. Brown, Dewitt C. Middleton, Albert Bushnell, of Watertown; James A. Outterson, of Potsdam, and John R. Coburn, of Carthage.

Fires.

T. McCreery, publisher, Buckhannon, W. Va., has been burned out.

Brenack & Co., paper dealers, 17 Warren street, were damaged $1,000 by fire October 12.

Thompson & Co., dealers in wall paper, Waco, Tex., have been burned out; insured for $6,200.

The Franklin Printing Company, St. Louis, Mo., was damaged by fire on October 18. Loss, $3,000.

Personals.

F. J. Marshall and George H. Marshall, of Turner's Falls, Mass., sailed for Europe on the Teutonic on Wednesday last.

William E. Lathrop was elected president of the Carleton Club, of Brooklyn, at the annual meeting held last Monday evening.

Henry C. Hulbert, of H. C. Hulbert & Co., was re-elected a director of the Pullman Palace Car Company at the annual meeting held on Thursday.

C. Cooper Clark, president of the Adirondack Water Power and Paper Company, who has been detained from business for three months by reason of an accident, is again at his office.

Charles Bassett, of H. C. Hulbert & Co., is the happiest man in town this week, owing to the arrival of a new heavyweight at his house. It's a boy and its name is Hulbert Dymoke Bassett.

Henry Powell Ramsdell, paper manufacturer, at Salisbury Mills, N. Y., and Adele Livingston Voorhis were married at the residence of the bride's parents, Mr. and Mrs. George H. Sheldon, 50 Dubois street, Newburg, N. Y., on Monday last at 3 P. M. The ceremony was performed with two rings by the Rev. J. Marshall Chew, of the Church of the Good Shepherd. About fifty guests were present.

Obituary.

W. R. Frantz, of Van Meter, Frantz & Co., publishers, McBain, Mich., is dead.

C. A. Dickson, publisher, Thessalon, Ont., is dead.

Market Review.

OFFICE OF THE PAPER TRADE JOURNAL, FRIDAY, October 19, 1894.

THE MONEY MARKET.—The stock market was very quiet, but the majority of moving shares closed at higher figures. Business in the loan market is light and possesses little significance. The trust companies are overburdened with deposits out of which they can make no profit because of their inability to make satisfactory loans. The offerings of call loans are so large that all lenders are very lenient in their examination of collaterals. Rates are 1 per cent. in all quarters, but private lenders have practical control over the market. Time loans are dull owing to the limited requirements of stock commission houses, which still prefer to borrow on call. Rates for time contracts are 1@1½ per cent. for thirty and sixty days, 2 per cent. for ninety days and four months and 2½@3 per cent. for longer dates. The commercial paper market is slow, without improvement in the offerings. Good notes sell as soon as offered, but there are numbers of second grade names offered. Rates are 2½@3 per cent. for best indorsed bills, 3@3½ per cent. for best single names, and 4@6 per cent. for those not so well known. The foreign exchange market was firmer, but dull, with only a moderate supply of bills. Posted rates were $4.87½ for sixty days and $4.88½ for sight. Actual rates were $4.86¼@4.87 for sixty days and $4.87½@4.88¼ for sight.

THE PAPER TRADE.—There is not much of special interest in the paper trade. The flour sack makers held a meeting this week and made an advance of $2, while the "Union" makers of grocery bags likewise held a meeting but did not raise prices, although none of them are up with their orders. Trade in the bag line is good, and orders are on a very liberal scale. News is being taken in larger quantities, and there is a better movement in most grades, the mill men talking a good deal more cheerfully as a rule.

JUTE BUTTS.—The market is quiet and prices are without change.

WOOD PULP.—The market is about as it was last week, and in this and neighboring States Ground Wood remains as then quoted.

WOOD FIBRE.—There is a very fair call for Chemical Fibre. Domestic Soda is quoted at 2¾@3c. for Bleached, and 2½c. for Unbleached. Domestic Sulphite is quoted at 1¾@2¾c., as to quality, for Unbleached, and 3½c. for Bleached. Foreign grades are quoted as follows: Unbleached Pine, soda process, 2.60@2.75c.; Bleached, same process, 3½@3.90c.; Unbleached, sulphite process, 2.50@3.15c.; Bleached, do., 4@4½c.; Bleached Straw Pulp, 4@4½c. This week there were imported at this port 73 tons of Chemical Fibre, being 47 tons from Antwerp and 26 tons from Hull.

FOREIGN RAGS AND PAPER STOCK.—The market is quiet and no important transactions were reported. Imports for the week aggregated 3,759 bales and 73 tons, being 525 bs. rags, 85 bs. papers, 73 tons chemical fibre and 3,149 bs. manillas. Ports of shipment and quantities are: Antwerp, 324 bs. rags, 47 tons chemical fibre and 1,275 bs. manillas; Hull, 26 tons chemical fibre and 319 bs. manillas; Liverpool, 16 bs. rags, 746 bs. manillas; London, 185 bs. rags, 85 bs. papers, 514 bs. manillas; Newcastle, 295 bs. manillas.

DOMESTIC RAGS.—There is a moderate trade in progress and quotations remain as they have, say, 3¼c. for Whites, 2@2½c. for Soiled Whites and 1@1½c. for No. 2's.

BAGGING, &c.—There is not much movement in Gunny Bagging, but we hear of sales at 1.10c., although some quotations range five points higher than this. Manilla Rope has been selling to some extent, ranging in price from 1.85@2c. Manilla imports for the week aggregated 3,149 bales, being 1,275 bs. from Antwerp, 319 bs. from Hull, 746 bs. from Liverpool, 514 bs. from London and 295 bs. from Newcastle.

OLD PAPERS.—There is a very fair call for medium grades. We quote: No. 1 Hard White Shavings, 2½@2¾c.; No. 1 Soft White do., strictly free from wood, 2.15c.; Soft White do., ordinary, 1¾@2c.; Old Ledgers, 2c.; Solid Printed Books, 1¼c.; Mixed Shavings, No. 1, 1@1½c.; Mixed Shavings, No. 2, ¾c.; Extra No. 1 Manillas, 90c.; No. 1 Manillas, ordinary, 75c.; No. 2 Manillas, 60c.; Light Book Stock, 60c.; Folded News, 35c.; Mixed Papers, 35c.; Commons, 25@30c.; Straw Clippings, 45c.; Binders' do., 45c.

STRAW.—Straw is quiet and unchanged. We quote: Long Rye at 50@60c.; Short Rye at 40@45c.; Wheat at 40c.; Oat at 40@45c.

ROSINS.—All grades are firm, and the offerings are very light. We quote: Common to Good Strained, $1.55@1.60; E, $1.80@1.85; F, $1.95@2; G, $2.10; H, $2.25@2.30; I, $2.40; K, $2.65@2.70; M, $2.95; N, $3.30; W G, $3.40.

CHEMICALS.—The market for paper makers' chemicals is quiet and the demand is practically unchanged since the date of the last review. Under date of September 27, J. P. Brunner & Co. speak of the Liverpool market as follows: "The anticipated improvement in the chemical trade on the passing of the United States tariff bill has not been fulfilled as regards prices, the substantial cutting of rates on Caustic Soda in America on the part of the United Alkali Company being somewhat of a surprise packet to most parties in the trade here. This cutting policy is probably to some extent accountable for the panicky feeling in United Alkali Company's shares on this market during the past week. The stock has had a drop during the last week of 22s. 6d. to 25s. on the preference stock, and about 15s. to 17s. 6d. on the ordinary stock, the quotations at the close to-day being £9 for the former and £4 10s @£4 12s. 6d. for the latter stock, all £10 fully paid. Except for the United States market, quotations for chemicals are nominally about unchanged since our last report. Soda Ash is dull for Leblanc makes, while Ammonia Alkali 58 per cent. is in fair demand. Soda Crystals continue slow of sale. Caustic Soda inactive, and for some markets prices are rather lower, but the export range is unaltered. Bleaching Powder in limited request at late rates." The market for Bleaching Powder is dull, and prices are as they have been. Alkali is in steady demand, mostly for actual wants, and prices are unchanged. Caustic Soda is as it was last week and no new prices have yet been made. Sal Soda is moving in a satisfactory way. During the week there have been sales 25 cks. Bleach at 1.82@1¾c.; 25 tons Soda Ash at 1¾c.; Caustic Soda 70 per cent., at 2.15c., and 74 per cent. at 2.20c.

CHINA CLAY.—There has been a fair amount of business transacted and several large orders have been received during the week. Potters have once more entered the field, and their presence is immediately felt, although they buy conservatively as yet. Business is steadily gaining and leaving the past recent inactivity.

TWINES.—There is a very fair trade in Twines. We quote: Sisal Hay Rope, 5@6c.; Sisal Lath Yarn, fine, 9¼c., and medium, 9c.; Jute Lines, 7½c.; Jute Ready, 7@7½c.; New Zealand Hay Rope, 6¼@7¼c.; New Zealand Lath Yarn, fine, 9¼c.; medium, 8¾c. Twines—Hemp, 4½ and 6 B Russia, 12c.; 4½ and 6 A American, 12c.; 4½ and 6 D Jute, 9½c.; 4½ and 6 L Jute, 9c.; Hemp Ball, 18 B C, 17c.; 18 C, 15c., Russian Hemp Hay Rope, 9c.

COAL.—There is a good demand for Bituminous coal, but prices rule low.

EDWIN BUTTERWORTH & CO.
MANCHESTER ENGLAND,
PACKERS OF ALL KINDS OF
Paper Stock, Cotton Waste and Buffalo Sizing, Wood Pulp, Moist and Air Dry Pulp, Soda and Ground Pulp,
(P) 83 GUNNY BAGGING, &c.
OFFICE IN NEW YORK:
Vanderbilt Building, No. 132 Nassau Street,
JAMES FIRNIE, A. S. DEMAREST, } Managers.

WATERBURY
Felts and Jackets,
MANUFACTURED BY
H. WATERBURY & SONS CO.,
ORISKANY, N. Y.
Adapted to *every* grade of paper, from the *finest* to the *coarsest*.
The Largest Manufacturers of Paper Makers' Felts in the World.
Our wet machine or pulp felts are *unequaled* for *durability*.
For WRITING and LEDGER PAPERS We warrant a felt equal to anything imported.

PRICES CURRENT.

NEW YORK MARKET.

Paper Market.

DEALERS' SELLING PRICES.

Ledger and Record	$0.18	@	$0.24
Flat Caps, superfines	14	@	16
Flat Caps, fines	11½	@	13
Flat Caps, engine sized	7½	@	9
Blotting, American	8	@	18
Blotting, English	17	@	....
Book, super sized and calendered	6	@	9
Book, super sized and tinted	6	@	7½
Book, extra machine finish	5½	@	6
Book, machine finish, low grade	5	@	5½
News, No. 1	4	@	4½
News, rag and wood	3	@	3½
Poster	5	@	7
Hanging, superfine, No. 1	8	@	10
Hanging, superfine, No. 2	6	@	8
Hanging, machine satin	4	@	4½
Hanging, white blank, No. 1	4	@	4½
Hanging, curtain	3½	@	4
Hanging, brown	2½	@	3
Colored papers, double mediums	6½	@	8
Colored papers, glazed medium	7½	@	8½
Colored papers, tobacco	8½	@	9½
Colored papers, tissues, 20×30, ℔ ream	1.10	@	1.35
Tissues, black, 20×30, ℔ ream	1.40	@	1.50
White tissue, 20×30, ℔ ream	85	@	1.00
White tissue, 24×36, ℔ ream	1.20	@	1.50
Manillas, Flour sack, cream	10½	@	....
Manillas, Flour sack, drab	9½	@	11
Manillas, Rope, unbleached No. 1	9½	@	11
Manillas, Rope, unbleached No. 2	7½	@	9
Manillas, No. 1, light weight	6½	@	6¾
Manillas, No. 1, heavy weight	6¾	@	6¾
Manillas, No. 2	5	@	6
Manillas, Bogus	2¾	@	3½
Wrapping Parchment	16	@	
Tissue Manillas, full count, weight and size, 24×36, other sizes in proportion	75	@	80
Hardware, light colored, No. 1	9	@	10
Hardware, No. 1, glazed, tarred	7	@	8
Hardware, No. 1, glazed	4½	@	5
Binders' Boards, ℔ ton, No. 1	70.00	@	90.00
Binders' Boards, ℔ ton, No. 2	40.00	@	50.00
Strawboards, air dried, No. 1, ℔ ton	47.50	@	....
Strawboards, steam dried, No. 1, ℔ ton f. o. b. mill	....	@	34.00
Straw Wrapping, basis, 15×20, 15½ lbs., 20 sheets—			
36×40, from 38 to 42 lbs. ℔ rm	85	@	....
30×40, from 30 to 34 lbs. ℔ rm	....	@	72
24×36, from 24 to 26 lbs. ℔ rm	....	@	60
22×32, from 24 to 26 lbs. ℔ rm	56	@	....
20×30, 21 lbs., ℔ rm	....	@	44
20×30, from 14 to 17 lbs. ℔ rm	36	@	....
16×22, from 12 to 13 lbs. ℔ rm	28	@	....
18×28	....	@	32
15×20, 10 lbs. ℔ rm	17	@	19
15×20, from 7 to 8½ lbs. ℔ rm	17	@	19
14×18	....	@	15
12×16	....	@	13
11×15	....	@	11
Straw Wrapping, ℔ lb., heavy weight	1.75	@	1.85
Straw Wrapping, ℔ lb., light weight	1¾	@	....
Cigarette, Straw Tissue, per case of 100 boxes, 50 books to the box, 200 sheets to the book	21.00	@	30.00
Tea Papers, 16 sheet quires—			
12x18	18	@	20
14x20	22	@	....
Card Middles, ground wood	5½	@	6¼
Card Middles, long fibre wood	8½	@	9
Card Middles, rag and wood	8	@	9
Pulp Lined Boards, single manilla, No. 100 and heavier	42.50	@	....
Pulp Lined Boards, double manilla, No. 100 and heavier	47.50	@	....

Chemicals, Coloring Materials, &c.

Alkali, 58 ℔ cent	1	@	1.20
Alum, lump	1.65	@	....
Alum, ground	1.75	@	....
Alum, Keystone	1¾	@	2
Alum, Diamond	....	@	2¼
Alum, pearl	2¾	@	2¾
Alum, porous	2¾	@	2¾
Alum, Merrimac porous	2	@	....
Aluminous Cake	....	@	1¼
Anti-Chlorine	....	@	2¾
Bichromate Potash, American	....	@	10
Bleaching Powders, spot	....	@	1¾
Cambridge Ochre	11.25	@	....
Caustic Soda, 60 ℔ cent	2.20	@	2.30
Clay, China, English, ℔ ton	12.50	@	17.00
Clay, China, "Star"	12.50	@	....
Clay, China, "Keystone"	10.75	@	....
Clay, South Carolina, ℔ ton	9.50	@	10.00
Clay, Terra Alba, French, ℔ cwt	1.00	@	1.12½
Clay, Terra Alba, American, No. 1	95	@	1.00
Corn Starch	3	@	3½
Copperas, American	....	@	60
Extract Logwood	9½	@	....
Mineral Pulp	10.25	@	....
Orange Mineral	....	@	9½
Potato Starch	4½	@	4¾
Prussian Blue, dry	30	@	35
Prussiate Potash, American	....	@	9½
Rosins, common to good strained, ℔ bbl	1.55	@	1.60
Rosins, E, ℔ bbl	1.80	@	1.85
Rosins, F, ℔ bbl	1.95	@	2.00
Rosins, G, ℔ bbl	....	@	3.10
Rosins, H, ℔ bbl	2.25	@	3.30
Rosins, I, ℔ bbl	2.40	@	....
Rosins, K, ℔ bbl	2.65	@	2.70
Rosins, M, ℔ bbl	2.95	@	....
Rosins, N, ℔ bbl	3.30	@	....
Rosins, W G, ℔ bbl	....	@	3.40
Sal Soda	1.10	@	....
Soda Ash Caustic, 48 ℔ cent	1.60	@	1.65
Soda Ash, carbonated, 48 ℔ cent	1.57½	@	1.70
Soluble Blue	40	@	55
Spanish Brown	½	@	1
Sugar Lead, white	12	@	....
Sugar Lead, brown	7	@	....
Sulphate of Alumina	....	@	2½
Sulphuric Acid, 66 ℔ cent	1	@	1¼
Ultramarine, blue	14	@	17½
Venetian Red	1	@	1½
Vitriol, blue	5½	@	5¾
Yellow Ochre Rochelle	1.25	@	1.30

BOSTON MARKET.

Paper Stock.

White Rags, No. 1	3½	@	3¾
No. 2 Whites	2	@	2½
Common Seconds	1¾	@	2
Thirds and Blues	1	@	1.10
Southern Mixed Rags	80	@	1
Colors, country	½	@	¾
Colors, city	25	@	30
New Calicoes, light	2	@	2½
New Calicoes, dark	1¾	@	1¾
Shirt Cuttings, best	4	@	4½
Shirt Cuttings, good	3½	@	4
Shirt Cuttings, unbleached	3½	@	3¾
Shirt Cuttings, unbleached No. 2	2½	@	2
Shirt Cuttings, cheviots	2½	@	2¾
Overall Cuttings, blue	2½	@	3
Overall Cuttings, brown	2	@	2½
Shoe Rags, bleached	3½	@	3¾
Shoe Rags, unbleached	3½	@	3¾
Shoe Rags, brown	3	@	3¾
Cotton Flannels, bleached	3½	@	4
Cotton Flannels, unbleached	3½	@	3¾
Corset Rags, drab	3½	@	3¾
Corset Rags, white	4	@	4½
Tailors' Seconds	1¾	@	1¾
Tailors' Colors	25	@	30
Cotton Canvas	3	@	3½
Cotton Canvas, No. 2	1¾	@	1¾
Linen Canvas	1½	@	2
New Canvas Cutting	4	@	4½
Insole Canvas	3	@	3¼
Print Papers, best	25	@	30
Print Papers, ordinary	....	@	....
Folded News	25	@	30
Old Waste Papers	20	@	25
Manilla Paper, No. 1	1.15	@	1.25
Manilla Paper, good mixed	85	@	90
Manilla Paper, blues	65	@	75
Mixed Book Stock	90	@	1
Books and Pamphlets	1	@	1½
Book Stock, light	70	@	75
Ledgers and Letters	1.90	@	2
Soft Book Shavings	1½	@	2
Hard White Book Shavings	2¼	@	2½
Leather Board Chips	75	@	85
Straw Chips	35	@	40
Shivey Bagging	1½	@	....
No. 1 Factory Bagging	¾	@	1
Burlap Bagging	1.00	@	1.05
Burlap Bagging, large pieces	....	@	2
Kentucky Bagging	....	@	....
Mixed Bagging	½	@	¾
No. 2 Bagging	½	@	¾
Shakings, soft	½	@	....
Tarred Shakings	1	@	1½
Standing Rigging	2¼	@	2¾
Standing Rigging, foreign	2¼	@	....
Bolt Rope	2	@	2.10
Oakum Junk, No. 2	1¾	@	1¾
Tarred Paper Junk	1.15	@	1.20
Tarred Paper Junk, inferior	¾	@	....
Manilla Rope	1¾	@	2
Tarred Manilla	1¾	@	....
Hemp Strings	1¾	@	2
Sisal Strings	....	@	1.10
Wool Strings	80	@	1.00
Flax Tow	¾	@	1
Flax Waste	¾	@	1

Chemicals.

Alkali	$0	@	1
Aluminous Cake, currency	1¾	@	1¾
Alum, American ground	....	@	1.90
Alum, American lump	....	@	1.85
Anti-Chlorine	2	@	2½
Bichromate Potash	9	@	9¼
Bleaching Powders	1¾	@	2
Caustic Soda, 74 ℔ cent	....	@	2.65
Clay, English, ℔ ton	14.00	@	18.00
Clay, American, ℔ ton	10.00	@	11.00
Copperas, ℔ lb	65	@	75
Extract Logwood	9½	@	10½
Lime, Rockland, ℔ bbl	85	@	90
Prussian Blue, ℔ lb	32	@	35
Prussiate Potash, yellow	24½	@	25
Prussiate Potash, red	28	@	30½
Rosin, common strained, ℔ bbl	1.90	@	2.50
Rosin, Medium	2.50	@	3.00
Rosin, extra pale, ℔ bbl	3.00	@	4.50
Sal Soda, ℔ lb	....	@	75
Soda Ash, 48 ℔ cent. caustic	1.40	@	1.60
Soda Ash, 48 ℔ cent. carbonated	1.37	@	1.50
Soluble Blue	2.50	@	3.50
Sugar Lead, white	8½	@	....
Sugar Lead, brown	5½	@	5½
Sulphuric Acid, 60°	¾	@	1¼
Terra Alba, ℔ ton	9.00	@	15.00
Ultramarine, ℔ lb	7	@	25
Venetian Red, ℔ lb	70	@	2¾
Vitriol, Blue	5½	@	3¼
Yellow Ochre	½	@	1

Wants and For Sale.

Twenty-five words or less, one dollar each insertion. Over twenty-five words, four cents a word each insertion, up to eighty words. Cash should accompany order.

Over eighty words, or displayed advertising, will be charged for by the inch, according to our regular schedule of rates.

Answers can come in our care and will be promptly forwarded without extra charge.

WANTED—POSITION TO RUN FOURDRINIER machine or engine; nineteen years' experience; am married and temperate; A1 reference. Address PAPER MAKER, Box 386, Newmarket, N. H.

WANTED—POSITION AS NIGHT FOREMAN or machine tender; can run any machine; nineteen years' experiences; married, steady, sober; state wages. M. F., Manchester, N. H.

WANTED—TWO FIRST-CLASS SALESMEN to sell oyster pails and folding paper boxes; must have recent experience in this line; give references and state salary. Address DARK, care of this paper.

WANTED—POSITION AS FOREMAN OF model news mill; one or two machine mill preferred; experienced on sulphite and cotton waste. E. E. L., Box 781, Leominster, Mass.

SITUATION WANTED—AS SUPERINTENdent of paper mill; twenty-five years' experience; used to all kinds of paper; best recommendations. Address J., care of Paper Trade Journal.

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WANTED—TWO MACHINE TENDERS thoroughly competent to run one, two or three cylinder machine on all grades paper; none but experienced men need apply; steady work and good wages. Address X. Y. Z., care Paper Trade Journal.

WANTED—A FOREMAN WHO HAS HAD good experience on sulphite wood news, and who can furnish first-class references for ability both in making paper and keeping plant up; mill in large city in New York State; state age and experience. Address EXTRA, care The Paper Trade Journal.

WANTED—FOREMAN IN A STRAW WRAPping mill; none but a first-class, thoroughly experienced man need apply. Address STRAW, care of The Paper Trade Journal.

WANTED—I HAVE HAD CHARGE OF THE Ohio Paper Co.'s No. 1 mill at Niles, Mich., for past seven years; product, combination strawboard, plain and colored; would like a position in some first-class mill on trial. M. W. WARD, Niles, Mich.

A MILL NOW RUNNING WANTS A PAPER maker to take an interest in the business; a good opening to the right man. I. S. DILLINGHAM, 67 Federal street, Boston, Mass.

WANTED—A MAN TO TAKE CHARGE OF repairs in a paper mill; must be a good draughtsman and not over forty years old; give references. Address B., care Paper Trade Journal, 67 Federal street, Boston, Mass.

SITUATIONS WANTED BY FIRST-CLASS superintendents, machine tenders and engineers; worked on all grades of paper; both slow and fast running machines; can furnish best references if required. Apply to EAGLE LODGE No. 1, Brotherhood of Paper Makers, Box 672, Holyoke, Mass.

SITUATION WANTED,

By young married man, as boss in color department; understands mixing colors for fine colored, white plated and chromo papers, enameled and glazed, ivories and satins for lithograph, bristols, boxboards and wedding cards; can give good references. Apply to COLOR MIXER,
Post Office Box 818, Holyoke, Mass.

FOR SALE—PAPER MILL, WITH OR WITHout machinery; 2,200 inches Hudson River Water Power; five wheels; one-eighth mile from shipping via rail or canal. For particulars McCARTHY & CHASE, Troy, N. Y.

FOR SALE—A 50 INCH RIGHT-HAND Findlay paper cutter; as good as new. ADAMS & CO., Chagrin Falls, Ohio.

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Two second-hand copies in first-class condition will be sold at a sacrifice. Desire to dispose of same at once. Address
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Wanted a partner with some capital to invest; also as manager of a plant to manufacture coated paper of all kinds; excellent location, with building and machinery mostly in place and sure market for a large product. Address COATED,
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FOR SALE.

Two second-hand Jordans.
One Marshall Engine.
Two Rotaries, 6 x 20 ft.
Two Daniels Rag Cutters.
Two Revolving Paper Cutters.
All guaranteed in good condition; nearly new.
NOBLE & FOSS MACHINE CO.,
Hoosick Falls, N. Y.

FOR SALE.

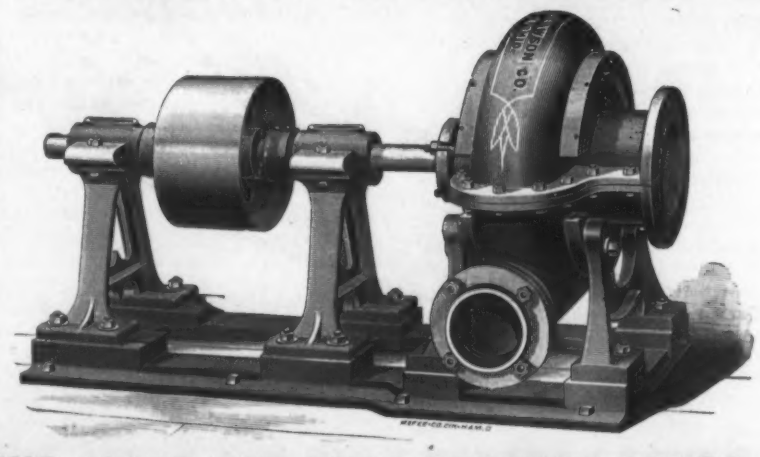
A set of six 88 inch revolving reels, new, our make, with heavy frames, gears, tension wheels, endwise adjustment, driven by weighted friction, a power rotating attachment and a reel turning device.
THE BLACK & CLAWSON CO.,
Hamilton, Ohio.

TO LEASE.

The Hanmer & Forbes Company's Manilla Mill.

BURNSIDE, Conn., April 10, 1894. C. F. HANMER, Secretary.

THE BLACK & CLAWSON CO., MANUFACTURERS OF Paper Mill Machinery,



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Screens, Calenders, Rag Cutters, Cylinder Molds, Deckel Straps, Paper Cutters, Screen Plates, Dandy Rolls, Stuff Box Trucks, Iron and Brass Castings.

REVOLVING REELS AND STACK REELS.

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To a company that understand the coating business an offer will be made to furnish a fully equipped plant, ample room with plenty of power. Well situated for future business. Will either lease plant or take an interest in the business. Parties answering advertisement must be in position to furnish all necessary capital to buy stock and carry accounts.
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NOTICE.

My attention having been called to the fact that certain parties are infringing certain Letters Patent granted to me, to wit: No. 212,866, dated March 4, 1879, covering a new form of carpet lining, and No. 235,698, dated December 21, 1880, covering the method of and apparatus for making the same, this is to notify all such persons, whether manufacturers or dealers, that any infringement of either of said patents will be prosecuted to the full extent of the law. MOSES NEWTON, Patentee.

PAPER MILL MACHINERY.

One 84 inch Fourdrinier part to paper machine complete, with Gould screen.
One 74 inch Fourdrinier machine complete, Gould screen; gun metal press rolls, 15x75 inches; eight iron dryers, 36x72 inches; stack of nine chilled rolls, 72 inch face; upright reel and cone pulley cutter; Bess slitter.
One Gould screen, eight plates, 10x36 inches.
One Gould screen, eight plates, 12x40 inches.
One Barber's suction.
One 70 inch machine complete, Gould screen, Fourdrinier wire, 70x33 inches; first and second presses; eight iron dryers, 36x65¼ inches; stack five chilled rolls, four 12 inches, one 16x64 inches face; upright reel, slitter and winder.
Two new 1,000 pound Holyoke Machine Co. beaters, wood tubs.
One 1,000 pound iron tub beater.
Six beating engines, 36 inch roll, iron tubs.
One 1,200 pound Horne patent engine, new.
One rotary, 7x20, double riveted, 9-16 inch shell.
Three Scott & Roberts hydraulic pulp grinders.
Three Jordan engines.
Two rag cutters and duster.
Four iron dryers, 28x72 inches.
Send for catalogue of machinery, steam engines and boilers.
1,000 feet shafting, 2 to 6 inches diameter; 500 feet belting, 5 to 48 inches wide.
Parties wanting tools, stock or machinery used in a paper or pulp mill can find it here at a bargain.
F. H. DAVIS & CO., Exchange B'd'g, Boston, Mass.

—THE—

Cedar Point Foundry,

PORT HENRY, N. Y.

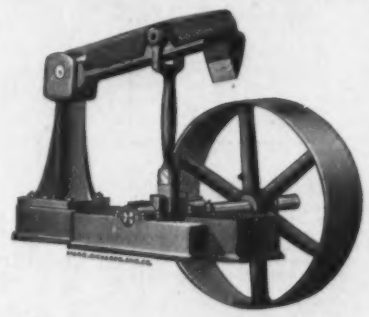
WOOD PULP GRINDERS,

WET MACHINES,

Jeffers Suction Screen,

Made in three sizes: Eight, Nine and Ten Plates.

SEND FOR BLUE PRINTS.



C. A. LAWTON,

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Manufacturer of Barkers, Splitters and Saws for Pulp Mills. Shafting and Pulleys a Specialty.

Write for Prices.

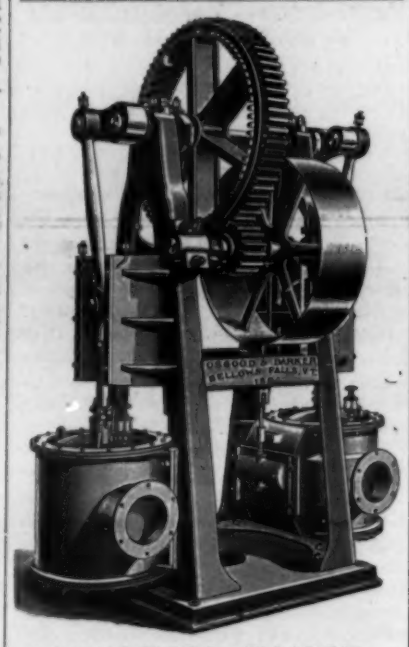
PROVIDENCE STATIONERY CO.

WHOLESALE DEALERS IN

Paper and Twine,

726 WESTMINSTER ST.,

Providence, R. I.



VACUUM PUMP.

Weight, Four Tons.

MANUFACTURED BY

OSGOOD & BARKER,

Bellows Falls, Vt.,

MANUFACTURERS OF

Sulphur Burners,
Acid Pumps,
Barkers,
Chippers,

FOR SULPHITE PLANTS.

Fourdrinier and Cylinder Paper Machines,

With one, two, three or four stacks of dryers.

Upright Reels, with two or three Drums,
Reel Stacks and Revolving Reels,
Rewinding and Slitting Machines,
Calender Buffing Machines

For buffing ends of the rolls.

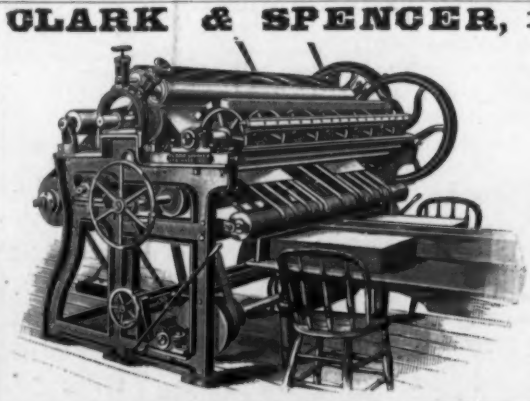
Ground Wood Pulp Machines, Wet Machines.

Pulp and Paper Machinery

For all kinds of Paper.

WRITE FOR DESCRIPTIONS AND PRICES.

CLARK & SPENCER, LEE, MASS.



Revolving Paper Cutters,
Rag Cutters,
Cylinder Machines,
Washing and Beating Engines,
Chilled Iron Calenders,
Fan and Stuff Pumps,
Engine Roll Bars.

DO YOU WANT A . .

RAG CUTTER,

TO CUT ROPE, JUTE BUTTS, BAGGING, OR ROOFING PAPER STOCK?

IF SO, WRITE TO

TAYLOR, STILES & CO.,

RIEGELSVILLE, N. J.

WATER POWER PLANT IN RICHMOND, VA., ON JAMES RIVER, ADMIRABLY LOCATED FOR PAPER MANUFACTURING.

60,000 SQUARE FEET FLOOR SPACE.

Mostly of latest fireproof construction and lowest insurance rate. Ample pump and hydrant service with Grinnell Sprinklers throughout. Power cheap and wheels in place. The above plant for sale. Adjoining property now occupied by a paper mill. Particulars with photographs and ground plans of buildings from

JNO. W. ARRINGTON, Richmond, Va.

MILL COGS

ON SHORTEST POSSIBLE NOTICE.

I make Cogs with blank head to be spaced and dressed after being driven; but make A SPECIALTY OF "READY DRESSED" cogs, which are ready to run the moment driven and keyed.

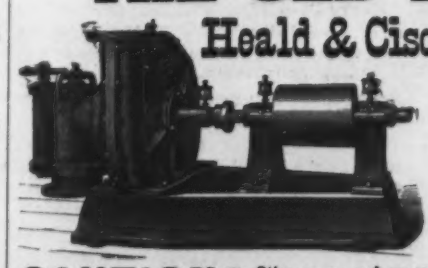
REMEMBER: I make ALL KINDS of Mill Cogs and have special facilities which will be of great service to you. WRITE AT ONCE for circular and instruction sheets, FREE.

N. P. BOWSHER, South Bend, Ind.

VISIT ME AT WORLD'S FAIR, Space 219, Column E E 4, AGRICULTURAL ANNEX.

THE OLD RELIABLE

Heald & Cisco Centrifugal Pump.



MORE OF THEM USED BY PAPER MAKERS THAN OF ALL OTHER KINDS COMBINED.

More than EIGHTEEN Thousand In Use.

CAUTION!—Other pump makers are advertising their wares as the "Baldwinsville" Centrifugal Pump. This claim is fraudulent and intended to deceive. We are the only manufacturers of Centrifugal Pumps in Baldwinsville, and we warn all purchasers against parties falsely claiming otherwise.

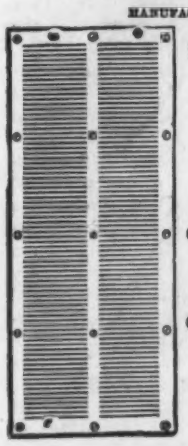
MORRIS MACHINE WORKS (formerly Heald & Morris). Baldwinsville, N. Y., U. S. A.

RENION & HUBBELL, Agents, 55 and 57 North Clinton Street, Chicago, Ill.

JUDSON & WILLIAMS,

HOLYOKE, MASS.,

MANUFACTURERS OF



SCREEN PLATES

—OF—

BRASS

—OR—

CAST METAL.

REPAIRING

OLD SCREEN PLATES

A SPECIALTY.

We Do ALL KINDS OF SCREEN PLATE WORK.

OLD PLATES **OVERLAID.**

(PATENTED)

MAIN Office and Works, WESTERN SCREEN PLATE WORKS, APPLETON, WIS., U. S. A. ESTABLISHED 1870.

BRANCH Office and Works, CENTRAL SCREEN PLATE WORKS, NIAGARA FALLS, N. Y. U. S. A. ESTABLISHED 1894.

2

METAL SKYLIGHTS

Absolutely no leakage from any source; no dripping or sweating; fire-proof; ventilating.

THE CLOVER LEAF

VENTILATOR

FOR MILLS, FACTORIES AND DYE HOUSES.

Made of galvanized iron or copper. Strong upward draft; exhaustr foul air, odors, gases, steam, etc. Perfectly storm-proof. Send for illustraied circular.

E. VAN NOORDEN & CO.,
383 Harrison Ave., BOSTON, Mass.

THE MORRISON & HERRON TESTING SYSTEM.

THE MORRISON & HERRON IMPROVED PAPER TESTING MACHINES.

Three Different Machines

—FOR—

Strength, Thickness and Weight.

A NEW PRINCIPLE APPLIED IN TESTING PAPER.

Thickness shown to the sixteen-thousandth part of an inch.

Used in the GOVERNMENT PRINTING OFFICE and the DEPARTMENTS at Washington.

Price, complete,	$150.00
Or Strength Indicator,	75.00
Thickness Gauge,	75.00
Paper Scale,	20.00

ADDRESS ALL ORDERS TO

HOWARD L. MORRISON,
1009 Pa. Ave., N. W., Washington, D. C.

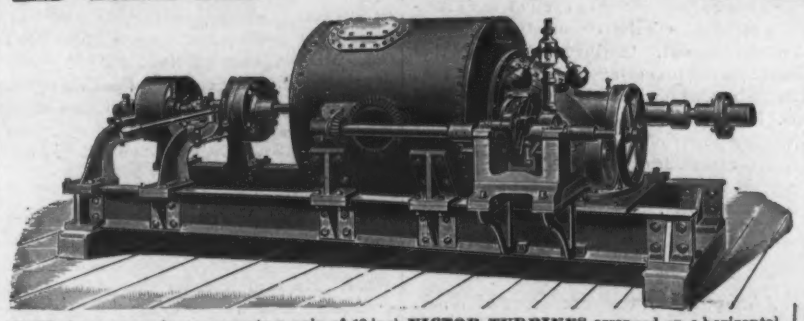
CAUTION.

All persons are liable to prosecution who make buy or use Paper Testers that confine and break paper within its edges, as my Patents cover that method.

THE VICTOR TURBINE.

UPRIGHT or HORIZONTAL.

In use in a large number of best Paper and Pulp Mills in this and other Countries.



THE above engraving represents a pair of 12 inch **VICTOR TURBINES** arranged on a horizontal shaft, with Cast Iron Flume, Draft Tubes, End Bearings for Shaft, and Driving Pulleys complete, all mounted upon a substantial cast iron bed plate. The entire arrangement is very complete and strictly first class in every particular. We are now prepared to furnish Victor Turbines, either single or in pairs, on horizontal shafts, and where the situation admits of their use we recommend them.

CYLINDER OR REGISTER GATE.

INSURING HIGHEST PERCENTAGE OF USEFUL EFFECT AT

FULL AND PARTIAL GATE.

TESTS IN HOLYOKE FLUME.

SIZE WHEEL.	HEAD IN FEET.	HORSE POWER.	PER CENT. OF USEFUL EFFECT
15 inch	18.06	30.17	.8962
17½ inch	17.96	38.35	.8980
20 inch	18.21	45.00	.8532
25 inch	17.90	68.62	.8584
30 inch	11.65	83.54	.8676
35 inch	17.29	133.19	.8497
40 inch	16.49	148.96	.8258
48 inch	15.51	179.29	.8202

Such results, together with its nicely working gate and simple, strong and durable construction, should favorably commend it to the attention of all discriminating purchasers.

THESE WHEELS ARE OF VERY SUPERIOR WORKMANSHIP AND FINISH.

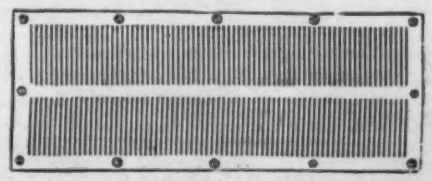
THE VICTOR WHEEL is particularly adapted to setting on **HORIZONTAL SHAFT,** DISPENSING ENTIRELY WITH GEARS.

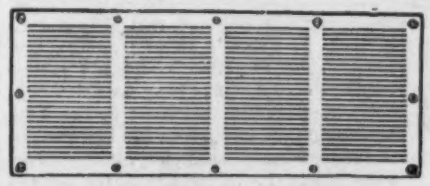
STATE YOUR REQUIREMENTS AND SEND FOR CATALOGUE TO

THE STILWELL-BIERCE & SMITH-VAILE CO., DAYTON, OHIO, U. S. A.

ANNANDALE Screen Plate Co.,

PATERSON, N. J.





Manufacturers and Repairers of

SCREEN PLATES.

Our new Plates are made of the **VERY BEST METAL,** and for price and durability cannot be surpassed.

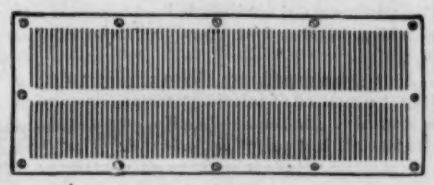
OLD PLATES RE-CLOSED.

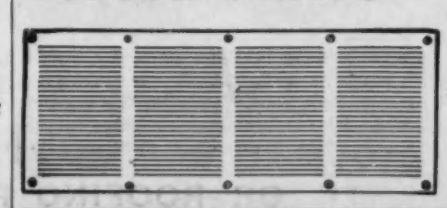
A. A. TRAIN,

21 Main St., FITCHBURG, MASS.,

MANUFACTURER OF

Screen Plates





OF BRASS OR CAST METAL,

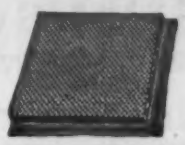
AT PRICES THAT CANNOT BE SURPASSED.

BEST STOCK USED.

Write for Prices and Gauges.

All Work Warranted.

SAMPLES AND QUOTATIONS FURNISHED UPON APPLICATION.



IMPERIAL ASBESTOS SECTIONAL PIPE AND BOILER COVERING.

Asbestos Prepared Roofings.

(Specially adapted to Paper Mills).

Chicago, Ill. **H. F. WATSON COMPANY,** Erie, Pa.

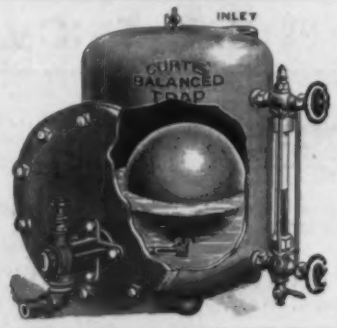
THE PAPER COMMISSION CO.,

Straw and Rag Wrapping Paper.

1775-1780 Old Colony Building, Chicago.

THE ROBERT AITCHISON PERFORATED METAL CO. CHICAGO, ILL.

PERFORATED METALS FOR PAPER MILLS.



. . THE CURTIS . . Balanced Steam Trap

Combines More Superior Features than any other Trap in the market.

One of them is that the electrically deposited copper float is large, perfectly round, very thick and hard, as hermetically sealed as a glass globe, of uniform thickness, and warranted against 200 lbs. pressure.

. . . MANUFACTURED BY THE . . .

D'ESTE & SEELEY CO.,

29-33 Haverhill St., Boston.

New York: 109 Liberty St. Chicago: 218 Lake St.

ESTABLISHED 1848.

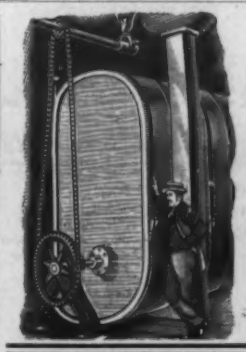
JOHN WALDRON, NEW BRUNSWICK, N. J.,

MANUFACTURER OF ALL STYLES OF

COATING MACHINERY FOR LITHOGRAPH, LABEL, FANCY, GLAZED, BOOK AND SAND PAPERS.

Also Cardboard and Paper Hangings Machinery. Hilbers, Staib and Waldron Patent Hanging Up Machines. Patent Power Reeling Machines for Coated Papers and Cardboard. Embossing Machines, Paper Rolls, Polishing Machines, &c.

Machinery is universally used by the manufacturers of above goods in the United States and Canada.



THE SAVAGE PERFECTING STUFF CHEST.

Fits into a narrow space and requires but little power to operate.

It has a double agitating motion, moving the stuff in different directions, which prevents "floating."

It empties itself clean; no waste of stuff and protects from dirt.

Quantity of stuff in chest always shown by indicator.

In writing give space in height, length and breadth if pressed for room; also the amount of stock in dry paper that the chest is wanted to hold.

PATENTED AND MANUFACTURED BY

E. L. SAVAGE, Mechanic Falls, Me.

FOSTER & BROWN, SACCARAPPA, MAINE.

MACHINISTS AND IRON FOUNDERS.

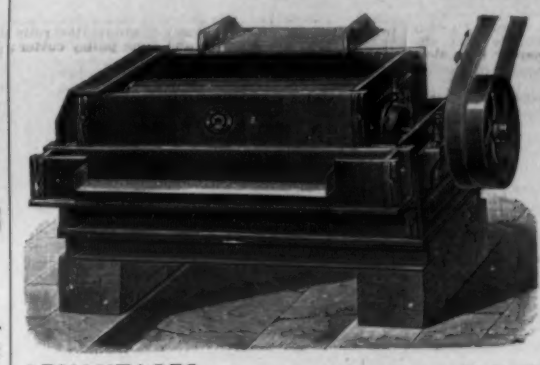
SPECIALTIES:

Improved Paper-Coating Machines; Hanging Machines and Power Reels for Coated Paper; the Merrill-Foster Noiseless Pulp Screens; Paper Slitting and Trimming Machines; Hardened and Ground Slitters; Automatic Elevators.

BUILT UNDER OUR OWN SUPERVISION.

THE "WANDEL" Rotary Sulphite Pulp Strainer,

PATENTED IN THE UNITED STATES AND CANADA,



And Now Used in the Following Mills:

33	Pulp Mills	in	Germany,
9	"	"	Austria,
5	"	"	Switzerland,
7	"	"	France,
1	"	"	Italy,
1	"	"	Spain,
2	"	"	England,
13	"	"	Norway and Sweden,
3	"	"	Denmark,
1	"	"	Finland,
6	"	"	Russia.

ADVANTAGES: Largest straining surface, combined with small requirement of room. Unsurpassed straining capacity. Absolutely reliable and noiseless work. No contact of the pulp with iron parts. Practical construction. Simple, durable, perfect. Price very moderate.

THE "WANDEL" ROTARY SULPHITE PULP STRAINER

Is the only system now adopted by the most important Sulphite Fibre Mills of Europe.

FOR FURTHER PARTICULARS APPLY TO

CHR. WANDEL, Reutlingen, Germany,

—OR—

GEO. HAMILTON, No. 74 WALL STREET, NEW YORK.

CYRUS CURRIER & SONS,

NEWARK, N. J.,

Paper Machinery.

KINGSLAND

BEATING ENGINE.

IMPROVED MACHINES FOR MAKING SQUARE PAPER BAGS.

By our PATENT methods of obtaining slack paper, severing bag lengths and applying paste, we are enabled to make perfect bags at a speed not attained by any other machine on the market. For full information and prices address

The Diamond Paper Bag Co.,

WILMINGTON, DEL., U. S. A.

NOW READY!

THE TWENTIETH EDITION

—OF—

LOCKWOOD'S DIRECTORY

—OF THE—

Paper, Stationery and Allied Trades

1894-5.

Price, Two Dollars a Copy,

POSTAGE PREPAID

THIS pioneer and standard book, now in the twentieth year of its publication, enjoys the confidence of every person in the trades which it represents. It is carefully and thoroughly compiled and edited each year. After one edition has been printed the type is distributed, and when a new edition is undertaken the data, item by item, are obtained and put into type especially for it, thus making the work reliable. Altogether about 475 pages set forth facts which must be invaluable to all engaged in the making and selling of Paper and Stationery, as well as all others in the allied branches of the trades.

It enables manufacturers, buyers and sellers to come together for mutual benefit.

The book includes a list of Paper Makers in the United States, Canada and Mexico; Wholesale and Retail Stationers, Paper Dealers; Leading Printers, Lithographers, Book Publishers, Bookbinders, Wall Paper Printers; Blank Book, Paper Bag, Paper Box, Envelope, Pad and Tablet Manufacturers; Railroad Buyers, &c., in the United States.

Orders filled according to date of receipt. Address

HOWARD LOCKWOOD & CO.,

126 & 128 Duane St., New York.

Manufacturing News.

EASTERN STATES.

The Whiting Paper Company, Holyoke, Mass., has put in a Marshall perfecting engine.

A meeting of the directors of the Rumford Falls Power Company was held at Rumford Falls, Me., last Tuesday, and the following named officers were re-elected: George H. Fletcher, president; Charles D. Brown, vice-president; Hugh J. Chisholm, treasurer; Allan M. Fletcher, Charles Alva Brown, Waldo Pettingill and W. C. Eaton, directors.

The Poland Paper Company, Mechanic Falls, Me., is now running its calenders by electric power. Three paper making machines are now in operation in the new mill and the fourth is being set in position. Two stacks of calenders have already been set, and the others are going in rapidly.

Shepley & Spaulding, West Derby, Vt., are building an addition to their pulp mill.

The Nonotuck Paper Company, Holyoke, Mass., has put in another (its sixth) Marshall perfecting engine.

The stockholders of the Rumford Falls Sulphite Company held a meeting at Rumford Falls on Tuesday last, re-electing George N. Fletcher, president; Hugh J. Chisholm, treasurer; Allan M. Fletcher, Frank W. Fletcher and Charles D. Brown, directors. The meeting voted to proceed at once to the completion of the plant, the big foundations being already in.

The Montague Paper Company, Turner's Falls, Mass., has put in its fourth Marshall perfecting engine.

MIDDLE STATES.

Frank Castler, formerly of Castler & Co., has rented the Sweet Paper Mill, at Phœnix, N. Y., from the estate of Frank Dilts. He expects to make toilet papers, and will have the mill running in a few days.

The Steward Manufacturing Company is said to be negotiating for the purchase of the paper mill property at West Newton, Pa. The concern will employ 100 hands. It is believed that the deal will be consummated.

The Fulton Paper Company, Fulton, N. Y., is making alterations in its plant, including the setting of two 50 inch Smith wheels, four Mills' grinders and one 72 inch Dilts wet machine.

The Photogenic Paper Company, Greenbush, N. Y., will shortly have another machine built for its factory, and will enlarge its working force.

A pulp and paper mill is to be built on the Oswegatchie River, New York, about 9 miles from the outlet of Cranberry Lake and 3 miles from the present terminus of the Carthage and Adirondack Railroad. Work is to be pushed, and by next September the mill is expected to be grinding wood pulp, cooking sulphite and manufacturing paper. By that time also a railroad will be built, as the New York Central people have agreed to extend their line from its present terminus at Benson's Mines to the door of the mill. A water power with a 40 foot head will furnish the power, and 15,000 acres of forest, belonging to the new company has enough wood on it to keep the mill running night and day for twenty-five years. The daily capacity will be 25 tons of paper, 15 tons of sulphite and 10 tons of ground wood pulp. There will be two machines, possibly a Fourdrinier and a cylinder, but probably two of the former. The organizers of the company are James I. Newton, of Watertown, who contributes the 15,000 acres of land, and James A. Outterson, present superintendent of the Racquette River Paper Company, of Potsdam, who will put up the mill. The capital stock will be $300,000.

Anson A. Maher, Wilmington, Del., has begun the manufacture of wall paper, and is turning out 1,000 rolls per day.

The Victoria Paper Mills Company, Fulton, N. Y., is now running its four machines. It has made extensive repairs this summer and now has its mills in first-class shape.

WESTERN STATES.

The English syndicate which has secured options on all of the pulp and paper mill plants in Wisconsin has obtained an option on a water power right at Little Quinnesec Falls, on the Menominee River, above Iron Mountain. It is owned by Isaac Stephenson, A. C. Merriman and W. A. Browne, and they have agreed to sell it for $100,000.

There is a project afoot for building a paper mill at Spokane, Wash. Eastern parties are said to be interested.

The Mead Paper Company has begun the construction of a new rag room for its mill at Chillicothe, Ohio. It will be two stories high, 40x100 feet.

James Leffel & Co., Springfield, Ohio, built the three pairs of water wheels which develop the power at the Falls of Juanacatlan, Mex. Each wheel is rated at 600 horse power, and the electricity generated by this means is carried 17 miles to the city of Guadalajara. James Leffel & Co. have reason to be proud of their work.

SOUTHERN STATES.

Matches made from paper are being manufactured at Brunswick, Ga., by Rosenda Torras.

Wellhouse & Sons will erect a new paper warehouse on Decatur street, Atlanta, Ga. It will be 105x150 feet and will cost $18,000.

CANADA.

The Springdale Mills, St. John, N. B., have started up after long idleness, under the management of T. F. A. and H. J. Webb, of Holyoke, Mass.

It is reported that a modern paper manufacturing mill is to be established in the vicinity of Vancouver, B. C. The promoters of the enterprise are working their scheme very quietly.

A Crack in the Morse Building.

The Morse building, 140 Nassau street, New York, is at present the centre of a good deal of attention. The excavating for the foundation of the "sky-scraper" which is being erected next door to it by the American Tract Society has caused it to settle, and the front and back walls are both cracked, while the interior walls are also in the same condition. Curious crowds line up on the west side of Nassau street and gaze at the cracks and evidently speculate on the probabilities of disaster. An immense foundation, 6 feet wide, has been built under the north wall of the building, and as the new structure of the Tract Society rises, the Morse building is being strengthened each day. Each day the building is examined by architects and other experts.

The tenants, who include Atterbury Brothers, Castle & Gottheil, Lewy Brothers, W. E. Lathrop, Theo. Bartow & Sons, S. M. Gladwin & Co., J. H. Sloan, G. H. Embree, Train, Smith & Co., Harvest Osbourne, do not seem at all excited over the matter, and do not express any fear of the building falling. Said Henry Atterbury: "No, these are not the kind of cracks we are looking out for. Our attention is devoted to looking after possible cracks from paper makers. The building is examined each day, and the cracks are not growing larger. In fact the building is stronger each day, as the walls of the Tract Building are rising each day. An expert who has examined the building says it would have to settle 3 inches more before it would reach the danger line."

Flour Sack Manufacturers.

The makers of flour sacks held a meeting at the Gilsey House in this city on Tuesday and Wednesday last, there being present James Arkell, Canajoharie, N. Y.; J. A. Davis, Pittsburg, Pa.; Alfred Adams, Chagrin Falls, Ohio; G. C. Sherman, Watertown, N. Y.; Samuel George, Wellsburg, W. Va., and D. S. Walton, of New York. These are about the same people who composed the old American Bag Company, which died some time ago. They are held together by an agreement and will meet once a month. Prices on bags have ruled low, and the meeting this week raised prices, ¼ bbl. bags, which were heretofore selling at $19, being raised to $21.

In Town.

J. A. Davis, Pittsburg, Pa.; C. H. Dobilinski, Lambertville, N. J.; Frank Gilbert, Troy, N. Y.; G. T. Keyes, East Pepperell, Mass.; Eugene Daniels, Franklin, N. H.; W. H. Pusey, Windsor Locks, Conn.; G. C. Sherman and S. C. Knowlton, Watertown, N. Y.; A. H. Chatfield, Cincinnati, Ohio; Morris W. Renick, Middletown, Ohio; J. D. Tompkins, Brainard, N. Y.; R. T. Smart, Troy, N. Y.; Samuel George, Wellsburg, W. Va.; Alf. Adams, Chagrin Falls, Ohio; J. T. Andrews, Penn Yan, N. Y.; W. H. Nixon and Albert Haverstick, Philadelphia, Pa.; James Arkell, Canajoharie, N.Y.; H. McInnes, Bridgeport, Pa.; H. S. Van de Carr, Stockport, N. Y.; J. T. Outterson, Brownville, N. Y.; F. F. Flint and J. A. Outterson, Potsdam, N. Y.

Accidents.

Patrick Bannon, about twenty-four years of age, foreman in the wood room of the pulp mill at Fort Edward, N. Y., met with a serious accident lately. He wished to shift a belt and gave word for the engine to be stopped, but did not wait until the motion had ceased. The result was that his clothing became caught and he was carried around on the belt. One arm was broken in two places, a shoulder dislocated, a leg broken, the temporal bone fractured, his left jaw bone broken and his face so badly scratched and cut that it took twelve stitches to close the wounds.

Failures.

Robert D. Richardson, stationer, &c., Winnipeg, Man., has assigned and has sent an explanatory letter to each of his creditors setting forth the circumstances of his embarrassment. In this he also states that he proposes to continue in business with W. A. Bishop, who will trade under the style of R. D. Richardson & Co., Mr. Richardson holding power of attorney to transact business for that firm, and that he proposes to pay all liabilities in full should success attend his efforts.

Creditors Meet.

A meeting of the creditors of W. A. Bingham & Co., paper dealers and manufacturers of flour sacks, was held at the Astor House on Tuesday last at 1 o'clock P. M. There were fifty-two creditors present, and an organization was effected by the selection J. T. Andrews as chairman and Alvah Miller as secretary.

Mr. Van Schaick, the assignee, was asked for a statement, and his attorney presented it, making comments on it as he went along. The statement was as follows:

ASSETS.

Cash on hand	$1,684.41
Merchandise on hand	35,325.95
Good book accounts	48,304.13
Machinery and fixtures	5,000.00
Total	$90,314.49

LIABILITIES.

Bills payable	$54,891.15
Accounts payable	49,975.07
Total	$104,866.23

The assignee's attorney said that both the merchandise and the good accounts had been brought down to a cash basis and that the statement did not include book accounts considered bad and which aggregated $19,930.61.

As to the machinery the assignee said that it consisted of printing presses, electro motors, &c., and that while it had cost about $40,000 he had put it in at $5,000. There was also a contingent liability on contracts for goods sold and purchased, and for the rent of the building occupied by the concern at $8,000 a year.

Mr. Bingham, when asked if he had any proposition to make, offered to settle at 50 cents on the dollar, 12½ cents cash and 12½ cents each in three, six and nine months.

Some questions were then put to Mr. Bingham, which showed that when the corporation was formed it assumed Mr. Bingham's assets and liabilities, and at that time the machinery was inventoried at $20,000 or $21,000. Since then the account had been increased by additions to about $40,000. Mr. Bingham received $50,000 worth of stock in the new company, and all of the stockholders put in cash except one man, who was given $5,000 for his good will. The capital was $100,000, of which $85,000 was paid up.

Mr. Bingham then retired.

R. T. Smart said that he understood that the machinery cost Mr. Bingham $6,000 and that there were $15,000 which did not count. He said that he was only a small creditor, but he wished to see the right prevail.

Paul Vernon, of Vernon Brothers & Co., moved that the proposition of Mr. Bingham be rejected; but as a substitute H. S. Van de Carr moved that a committee of five be appointed to investigate and report.

Chairman Andrews asked the creditors not to act hastily.

The motion prevailed and the committee was made up as follows: Morris W. Renick, J. T. Andrews, James W. Lane, J. A. Outterson and J. T. Outterson. The meeting then adjourned to Wednesday at 4 P. M.

At the adjourned meeting on Wednesday the committee reported that they had examined the debtor's accounts, stock, machinery, and that they could not recommend an acceptance of his proposition.

Mr. Renick said that when he heard the statement read he thought $5,000 was a low estimate for the machinery, but after an examination he thought that the sum of $10,000 was low.

J. A. Outterson called the attention of the creditors to the schedule of doubtful accounts. He said: "It shows for instance that J. D. Tompkins has at his mill paper of W. A. Bingham & Co. valued at $3,187.71, and in the accounts payable it appears that the corporation owes him $3,420, but the paper does not appear as an asset. Mr. Tompkins refuses, by advice of counsel, to give the paper up. Another item in the doubtful accounts is that of C. S. White for $6,769.99, while in the accounts payable he is put down for $5,950. I understand that Mr. White is good. Then there is a claim of $4,000 for insurance on some paper burned at the Phœnix Mill, which ought to turn out something. Then the Graham Paper Company is in the doubtful accounts. The Graham Paper Company will probably be flattered at that. Here is one item of $1,762.66 which belongs to Staats D. Tompkins, a salesman of the house. Then there is D. V. Bergen, one of the partners in the house, who owes the concern $2,451.55."

A VOICE—That is the good will man.

J. T. Andrews and J. A. Outterson both said that the stock was clean, well chosen and very staple.

Morris W. Renick was then asked to present some figures which he had made up. He said: "I believe that the merchandise can be converted into cash and $28,000 realized for it in less than thirty days. I am also prepared to say that the machinery which was inventoried at $5,000 can be sold in a little more than five minutes and a certified check for $10,000 returned for it. The good accounts are placed at $48,000 and the doubtful accounts at $19,000. Shrinking this sum one-third gives $45,000, and that with the cash gives $85,000 in round figures with which to pay $105,000 liabilities. It looks as though there was enough to pay 80 cents on the dollar."

J. T. Andrews said that a jobber had told him that the stock ought to realize 90 per cent. of the inventoried price.

The assignee, who had been sent for to explain the doubtful accounts, said that J. D. Tompkins had made paper to be sold on commission by W. A. Bingham & Co. That paper was stored in the Bingham warehouse at the Tompkins mills, and advances in the way of notes had been made on it. Tompkins now declined to deliver the paper. The White matter was a "sort of commission" account, and was somewhat of the same nature as the Tompkins account. He said that he preferred to have them figure as doubtful accounts rather than otherwise. S. D. Tompkins was a salesman on commission who had overdrawn his account, and the Bergen matter was also an overdrawn account. The account had been reduced by Mr. Bergen some $500 or $600 from its original figures.

There then followed a discussion, entirely informal, during which Mr. Renick said that there were certain creditors who would take back their own goods, paying cash for them at the prices inventoried, in order to simplify matters and help the assignee to dispose of the stock.

There was a query made as to why the

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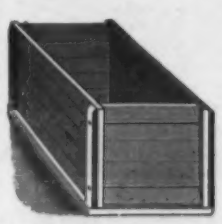

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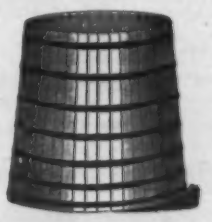

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Nixon account was not represented, whereupon J. A. Davis said: "I am told that Mr. Nixon declined to assist the company, advised an assignment and says that he will not settle at any less than 100 cents."

Mr. Bingham said that Mr. Nixon had expressed himself as ready to do whatever he could to straighten matters out.

The creditors then rejected the offer of W. A. Bingham & Co.

Mr. Bingham said that he did not know that he had anything to offer, and he thought the creditors ought to make a proposition. He thought at first that 50 cents was all he could pay, but, after further consideration, he thought that he could do better, but he was not in a position to make a definite offer until after consultation with his co-workers. He had been under a heavy load, and did not want to go into such a condition of affairs again. One failure was enough, and he did not desire to make any arrangements which he could not carry through to success. He wanted it distinctly understood that there was no arrangement or understanding with any creditor whereby anyone was to have the advantage.

Mr. Andrews said that he had been made aware that there was an impression that he was to receive his pay in full. Such an impression had no foundation in fact. He would be pleased to see the company go on, and if the settlement was made at 50 cents his loss would be about 1 per cent. of the total twelve months' business with the company.

W. W. Davis moved that the company be informed that nothing less than 75 per cent. would be accepted. The motion was lost, the vote being equally divided.

On motion of J. A. Davis the committee of five was empowered to consider the entire proposition and report on the next day.

At the adjourned meeting on Thursday Mr. Renick, of the committee, reported that a jobber whom he had consulted said that he thought he would give 80 per cent. for the stock, but should want a chance to examine it first. The offer of $10,000 for the machinery was yet good.

A proposition was then submitted from W. A. Bingham & Co. to pay 60 per cent., 20 per cent. cash and the remainder in three, six, nine and twelve months.

The proposition was unanimously rejected.

Mr. Hager, who was not present when the vote was taken, spoke in favor of it and the vote was reconsidered. It was again put and again rejected by a unanimous vote.

A motion was adopted that nothing less than 70 per cent. would be accepted. This resolution was conveyed to the debtor, who after long consultation raised his offer to 65 per cent., 20 per cent. cash, 10 per cent. each in three, six, nine and twelve months and the last 5 per cent. in fifteen months. This the creditors finally accepted.

Among the creditors, as shown on the list presented to the meeting, are Paper Commission Company, $519; National Paper Bag Company, $2,861; J. D. Stone & Co., $83; Lees Manufacturing Company, $142; Tytus-Gardner Paper Manufacturing Company, $1,255; Jas. F. White & Co., $731; Oval Wood Dish Company, $1,667; Wardlow-Thomas Paper Company, $7,257; Thomas Phillips Company, $749; Racquette River Paper Company, $1,468; Charles E. Callender, $124; Norwich Carpet Lining Company, $154; Outterson Paper Company, $1,138; Hager Straw Board and Paper Company, $1,500; S. Austin Bicking, $132; Cushnoc Fibre Company, $319; Thilmany Pulp and Paper Company, $2,619; Phœnix Paper Mills, $570; Victoria Paper Mills Company, $832; Ticonderoga Pulp and Paper Company, $2,092; Tarentum Paper Mills, $1,157; J. W. Shattuck, $1,688; Jos. Bancroft & Sons Company, $642; Ondawa Paper Company, $1,131; P. H. Gladfelter, $347; Fox & Curtis, $354; Robinson & Shackelton, $913; H. S. Van de Carr, $58; M. & W. H. Nixon Paper Company, $15,968; Wilkenson Brothers, $287; F. R. Walker & Son, $166; Albany Perforated Wrapping Paper Company, $183; J. E. Reynolds & Co., $240; A. H. Hart Company, $125; Vernon Brothers & Co., $31; Dudley, Batelle & Hurd, $366; A. F. Reid, $97; A. D. Smith, $1,513; Arabol Manufacturing Company, $82; Root, Childs & Co., $506; Wheelwright, Eldridge & Co., $458; W. Lupton, $493; G. H. Morrill & Co., $662; J. H. Lane & Co., $2,636; J. G. King Manufacturing Company, $172; Est. J. Robertson, $131; Gould Paper Company, $4,954; Ide & Haversteck Company, $1,762; F. S. Pownall, $711; Small Brothers, $995; R. T. Smart, $145; Train, Smith & Co., $1,543; J. T. Andrews, $2,668; Sandy Creek Manufacturing Company, $153; W. A. Bingham, $505; Bayless Pulp and Paper Company, $1,782; Diamond Tray and Basket Company, $1,066; Phœnix Paper Co., $1,304; J. D. Tompkins, $3,420; C. S. White, $5,950; Clinton Bank, $5,000; Importers and Traders' National Bank, $5,000; Angell & Langdon, $1,019; Eagle Paper Company, $434; Niagara Falls Paper Company, $228; Hartford Paper Company, $157; Economy Box and Pie Plate Company, $734; Castleton Paper Company, $459; Manuel Hardy & Co., $489; Knowlton Brothers, $103; Little Falls Paper Company, $189; Wilmington Mills Manufacturing Company, $118; J. D. Quincy, $500; S. Charles Welch, $1,393; M. L. Baldwin, $319; New York city tax, $537; New York State tax, $365.

General Notes.

During the coming week the Crocker Manufacturing Company, Holyoke, Mass., will run on its specialties in terra cotta, primrose, lilac, fawn, old gold, cherry, Victoria green, and light and dark buff. Send in orders early.

It may not be generally known that there is now no such place as Birmingham, Conn. The borough of Birmingham became the city of Derby January 1, 1894, and the name of the post office was also changed to Derby on the same date.

It has been discovered that over 200,000 postage stamps have been stolen from the Bureau of Engraving and Printing, at Washington. The parties implicated are William B. Smith, formerly of Plainfield, N. J.; George W. Longstreet, an employee in the stamp department of the Bureau; William A. Beach, and a man supposed to be named Simmerslitz. Smith and Longstreet are under arrest.

The Canadian correspondent of the *American Stationer* says: Great competition now prevails among the paper makers of this country, and as a consequence prices are dropping down and down. News is especially cut. Some time ago the manufacturers agreed to charge 4¼ cents for common news, similar to what is sold in the United States for about 2 cents. This was two years ago, before the E. B. Eddy Company started making news on a large scale. Then the price gradually fell until 3¼ cents was reached. This was thought to be low water mark. A few sales have recently been made at 3 cents, but some dealers are yet paying 3¼. In fact, all are, except a few of the largest consumers. To-day, however, I heard of a quotation on three carloads at 2⅞ cents. This is low water mark and precludes all possibility of a profit to most of the mills, as their machinery is not modern enough nor their power to secure pulp great enough to enable them to manufacture at this price. When this low price is considered in connection with the fact that a new mill near Winnipeg and a new mill in British Columbia will cut off a great deal of trade formerly enjoyed by the Ontario and Quebec mills, it can be seen that the latter are being pushed into deep water. If the project for building the largest mill in the world at Port Arthur (Kanabac Falls) is carried to a successful issue, some of the old-fashioned mills in the older provinces will have to close down. One or two of the mills which have for years been manufacturing the cheaper grades of news and book have decided to abandon it and go in for higher grades. They will thus contribute to a more limited market, but will be able to secure more profitable prices.

An improved process for making medicinal paper treats the pulp from which the paper is made with certain essential oils or essences either by mixing, steaming, sprinkling or other suitable method, or they may be applied during other stages of its manufacture or the finished paper impregnated with them. Among the oils and essences used are those of the eucalyptus, and of other tarry, coniferous or resinous trees. The paper thus treated is said to be a good disinfectant, and the odor when inhaled acts soothingly on the throat. Cigarette paper treated in this way will, it is claimed, benefit diseases of the throat and lungs.

The Season's Jute Crop.

The circular issued by the Department of Land Records and Agriculture, Bengal, India, giving the final forecast of the jute crop for season 1894 (to the middle of August), contains the following: An attempt has been made, as in the previous year, to estimate the gross outturn of jute during the current season, and to compare it with the estimated gross outturn of 1893. For this purpose an all round rate of 1,200 pounds or three bales has been assumed, as in previous reports, to be the average rate of production per acre for every jute growing district in Bengal.

The gross outturn of jute this year would appear to amount to 30,324,000 maunds (6,064,800 bales), against 25,003,500 maunds (5,001,700 bales) estimated to have been produced last year. The crop of 1893 having been estimated at 13½ annas, the character of the present crop may be expressed as 606-500ths of 13½ annas, that is, as 16 2-5 annas. It may be asked what becomes of that part of the jute crop which is not exported. It was stated in 1893 that local mills cousume about 15 lakhs of bales.

It has been roughly estimated by certain district officers that the domestic consumption of jute may amount to 4 seers per head of the population in certain Bengal districts. There is, however, no very reliable information on this point. It will be remembered that although these returns are confined to twenty-six districts, a little jute is grown in other districts, and a certain amount, probably representing half a lakh to three-quarters of a lakh of bales, comes from the Assam Province. The quality of jute (inclusive of cuttings and rejections) likely to be available for export out of this year's crop is estimated at 31 to 32 lakhs of bales, against 31 lakhs of bales exported from the crop of 1892, and 25 lakhs of bales from last year's crop.

Electrolysis of Alkaline Chlorides for the Preparation of Caustic and Chlorine.

By H. Y. Castner.

The success or failure of the attempts heretofore made to electrolyize alkaline chlorides for the preparation of caustic and chlorine has been determined in almost all cases by the particular means employed for preventing the recombination of the products of the electrolysis. It is, in fact, upon this point that the greater part of the difficulties of the whole problem centre. With all these processes it may be possible with certain arrangements of the parts composing the apparatus, effectively to separate the electrolytic solution containing chlorine from the caustic produced; but there still remains the question of the electric power necessary to overcome resistance, for unless a current of large volume can be passed through such a cell with low potential difference the process could never be an economical one.

It is the opinion of many experts that the main difficulty in a successful process for the electrolysis of this class of substances lies in the positive electrodes. From this opinion I dissent. It may be one of the causes of economical failure, but it is not the prime cause. If a solution of an alkaline chloride could be electrolyzed by any of the methods or apparatus heretofore proposed, whereby the products of the electrolysis would be prevented from intermingling, except possibly to a very slight degree, in a coil which would take a current of large volume with a low electromotive force, then the ordinary retort carbon electrode would stand fairly well, and the item of expense due to disintegration and wear of the anode would not seriously affect the economical result.

The wear of the carbon electrodes is to a very great extent due to the presence of hypochlorite in the electrolytic solution. The quantity of hypochlorite present is, to a degree, a measure of how effective may have been the means employed to prevent recombination of the chlorine and caustic, since this compound is only formed by the chemical combination of these two substances.

In all processes which have hitherto been proposed hypochlorite is formed and accumulates more or less in the electrolytic solution. The presence of hypochlorite in chloride solutions during electrolysis, besides meaning a reduction of current efficiency, yields by electrical action a proportion of oxygen together with chlorine, and it is due to the combined action of these two elements that the wear of the electrodes is mainly due.

It necessarily follows that the greater the amount of hypochlorite present in the chloride solution the greater the decrease in electric efficiency and the greater the proportionate wear of the carbon electrode. In any process wherein the chlorine and caustic may and do recombine to form hypochlorite the degree or amount of such recombination not only determines the current efficiency, but also determines to a still greater extent the wear of electrodes; and unless the current decomposes the hypochlorite as fast as it may be formed, the quantity gradually increases in the electrolytic solution, so constantly diminishing the current efficiency and increasing the relative disintegration of the carbons. As it is a practical necessity with all processes that the chloride solution be in continuous use, being charged from time to time or continuously with fresh quantities of the electrolyte, it becomes requisite, when using a process wherein hypochlorite is formed, to so treat the solution at intervals as to destroy the hypochlorite and prevent accumulation, or else discard such a solution after a certain length of time.

As to the possibility of employing some other material than carbon for the positive electrode which shall be a fair conductor I can hardly imagine any substance which would fill this required condition and also withstand the action of both chlorine and oxygen in aqueous solution. The carbons forming the electrodes may, however, be so treated as to make them more permanent under this disintegrating action, as will be seen later on.

The means which have been suggested in the various proposed processes to prevent recombination of the electrolytic products have consisted in the use of either specially made porous diaphragms or of impervious substances so placed as to keep apart the resulting products, supplemented by mechanical devices or by taking advantage of the gravity of the two solutions or products. According to both varieties of processes it might be possible to prevent almost completely any recombination of chlorine and caustic, but in so doing the all important question of electrical power must be considered, as determined by the quantity of current employed and the electromotive force necessary.

With the first class of processes the construction of a diaphragm which will withstand the action of both chlorine and caustic is a matter of great difficulty. It must be sufficiently porous to interpose but slight resistance to the passage of the current, and contrarywise not so porous as will allow the two solutions to intermingle to any extent.

The second class of processes have this advantage over the diaphragm processes, if they may be so called, that they do away with any electrical resistance which may be caused by the interposed diaphragm; but with these processes the chemical separation of the products is not so effectual. In both cases, however, the electrodes must necessarily be some little distance apart, and the chemical separation of the products is only effected to a degree. Any attempt to produce concentrated solutions of caustic only increases the amount of and tendency to recombination. The solutions actually produced are more or less dilute, and contain a large proportion of chloride, so that they require treatment besides an excessive concentration before obtaining the solid caustic.

Thus the first and most important feature of a good process is the absence of any recombination of the electrical products giving rise to hypochlorides, which destroy the electrodes, render the solution unfit for continuous use, and further gradually increase the electrical efficiency.

The second feature, which is almost equally important, is the large decomposition per watt per cell, being equivalent to the quantity of chloride decomposed per cell per indicated horse power.

The third requisite is the strength of the caustic solutions and their purity.

Fourth, the apparatus must be of comparatively simple construction, with little liability to wear or require repair, and need but little attention in operation.

A process may be successful, regarded from a scientific point of view, if it fulfills any one of these conditions and also successful economically to a certain extent; but to be really a good process from both standpoints it must fulfill all these conditions.

As to other processes heretofore proposed which could not be classified under the headings of the two varieties here mentioned, these are:

1. The employment of fused electrolyte, and

2. The use of mercury as a cathode only and the subsequent treatment with water to oxidize and remove the sodium in the form of caustic.

The first method, owing to the low efficiency, the high electrical resistance and large wear and tear of apparatus, presents so many difficulties as to render any success in this direction almost impossible.

The use of mercury as a cathode is a very old idea, but has not hitherto met with any success. From a scientific standpoint the plan seems a good one, as it would yield pure caustic, little or no hypochlorite, and the product would be fairly large for the power employed.

The great difficulty, however, against its success economically is the enormous quantity of mercury required in carrying on such a process, and the great quantities to be handled in order to obtain relatively small quantities of caustic.

Radically differing from all other processes having the same end in view is the process in operation at the works of the Aluminum Company, Limited, Oldbury, near Birmingham. The essential features of this process are the employment of a moving body of mercury which completely separates the products of electrolysis, and by its movement takes the place of a diaphragm, the amalgam formed by the electric action being decomposed electrically as rapidly as it is so formed. The cell, which is divided into three compartments, is capable of being continuously rocked or tilted, so as to give to the contained mercury a flowing motion from side to side. The two outside compartments contain the alkaline chloride solution and the carbon anodes, while the middle compartment contains an iron cathode and the caustic solution.

The solution of salt or chloride is continuously circulating through the outside compartments, wherein it is being electrolyzed, and then returns to saturators, where it is recharged with salt. The electric current traversing the salt solution liberates chlorine and also forms sodium amalgam. The chlorine escapes from each cell through an aperture provided into one large collecting main, while the sodium amalgam, by the continuous back and forward tilting of the cell, passes to the centre compartment, where it acts as an anode during the passage of the current to the cathode, the sodium being liberated and going in solution as caustic. The chloride energy stored in the sodium amalgam is thus made use of electrically to aid in carrying on the process. A regulated quantity of water is admitted hourly to the centre compartment of each cell, causing the pure solution of caustic to overflow through a discharge pipe into a large collecting pipe connected with all the cells.

Thus each and all cells are connected with four mains, for the supply of saturated brine, for the return of the electrolytic solution to be resaturated, for collecting the chlorine and for collecting the caustic. The cells are also electrically connected in series and are capable of being cut out or put in operation at will. The process is of course continuous and has demonstrated on a large scale the following results:

1. The electrical efficiency is 88 to 90 per cent.

This high efficiency is due to the particular features of the process and also to the fact that the sodium is removed from the mercury electrolytically as rapidly as it is formed, so that actually the mercury in circulation rarely contains more than .02 per cent. of sodium.

2. No hypochlorites are produced.

The small loss of efficiency below the theoretical is not represented by chlorine combining with caustic, but by chlorine and sodium recombining to form salt.

3. The solution forming and carrying the electrolyte is in continuous use.

4. The wear of carbon anodes is so small as not to be of importance to the commercial result.

In addition to the advantage the carbons possess in this process, owing to the absense of hypochlorites, they are previously treated by a special process which enables them to withstand the electrical action. So treated it has been found impossible to employ the ordinary pressed carbon instead of retort carbon.

5. The electromotive force required for each cell is 4 volts for a current of 550 amperes.

This low electromotive force is accounted for by the peculiar features of the process, the non-accumulation of sodium in the mercury, and particularly to the fact that the electrodes, cathode and anode are brought almost into contact.

6. Each cell, which is 6 feet long, 3 feet wide and 6 inches deep, decomposes 56½ pounds of salt daily, producing 38½ pounds of caustic and 34½ pounds of chlorine in twenty-four hours, for an expenditure of 3½ I. H. P.

7. The caustic solutions produced contain 20 per cent. of caustic soda and produce by direct evaporation a solid caustic of 99½ per cent.

8. The chlorine gas is of 95 to 97 per cent. purity, the balance being hydrogen.

9. The cells in operation are particularly automatic and require little or no attention. They are so simple in construction that a cell in full operation may be stopped, emptied, taken completely apart, put together again and started in less than two hours by the labor of two men.

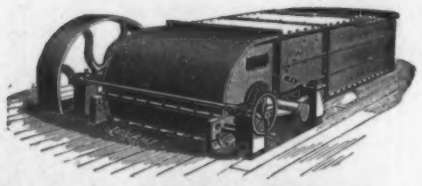
A cell in operation running at an efficiency of 88 per cent. gives the following actual results.

Per hour decomposes		1,508 grms. of salt.
Per hour produces		794 grms. of caustic.
Per hour produces		642 grms. of chlorine.
Per day decomposes		56½ lbs. of salt.
Per day produces		38½ lbs. of caustic.
Per day produces		34½ lbs. of chlorine.
Actual E. H. P., per cell		3
Actual I. H. P., per cell		3½
Salt decomposed per ampere	hour.	1.92 grms.
Salt decomposed per watt	hour.	.48 grms.
Salt decomposed per K. W.	hour.	1.06 lbs.
Salt decomposed per I. H. P.	hour.	295 grms.
Caustic produced per I. H. P.	hour.	209 grms.
Chlorine produced per I. H. P.	hour.	188 grms.
Salt decomposed per I. H. P.	day.	16.00 lbs.
Caustic produced per I. H. P.	day.	11.00 lbs.
Chlorine produced per I. H. P.	day.	9.80 lbs.

The present plant, which has been erected by the Aluminum Company, Limited, to demonstrate on a large scale the commercial success of this process, consists of thirty cells, and has a daily output of 1,200 pounds of pure caustic soda and 1,000 pounds of chlorine, with an expenditure of 110 I. H. P.

The process has been made the subject of several patents both here and abroad, all of which are owned by the Aluminum Company, Limited. The original patent covers the main features of the process and apparatus. A second patent covers broadly a mechanically moved cell, by means of which the mercury is kept in motion, and a third patent relates to a special process for the treatment of carbon for use as electrodes.—*Engineering and Mining Journal.*

THE J. H. HORNE & SONS CO., LAWRENCE, MASS.



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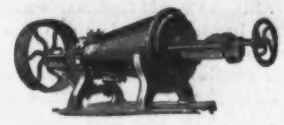

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High Falls Sulphite Pulp Co.	Potsdam, N. Y.	10	..
The Empire Pulp Co.	Black River, N. Y.	1	..
Globe Paper Co.	Brownville, N. Y.	2	..
Union Pulp Co.	Carthage, N. Y.	1	..
Frontenac Paper Co.	Dexter, N. Y.	1	..
Leonard & Gilmore	Dexter, N. Y.	1	..
Patterson Paper Co.	Brownville, N. Y.	3	3
Oswego Falls Paper Co.	Fulton, N. Y.	4	3
Gouverneur Wood Pulp Co.	Gouverneur, N. Y.	4	4
Knowlton Paper Co.	Watertown, N. Y.	1	..
Ontario Paper Co.	Watertown, N. Y.	2	2
Herkimer Paper Co.	Lyons Falls, N. Y.	4	3
G. H. P. Gould	Port Leyden, N. Y.	1	..
Gould Paper Co.	Port Leyden, N. Y.	3	2
Racquette River Pulp Co.	Colton, N. Y.	3	..
Sparks Manufacturing Co.	Hamburg, N. Y.	1	..
Charles Callender	Glendale, Mass.	2	2
Merrimac Paper Co.	Lawrence, Mass.	2	2
Connecticut Paper Co.	Holyoke, Mass.	1	..
Carew Manufacturing Co.	South Hadley Falls, Mass.	2	2
Rice, Barton & Fales	Worcester, Mass.	3	2
Eaton, Dikeman & Co.	Lee, Mass.	1	..
Fall Mountain Paper Co.	Bellows Falls, Vt.	12	7
Wyman, Flint & Sons	Bellows Falls, Vt.	3	2
National Metal Edge Box Co.	Readesboro, Vt.	1	..
Glen Manufacturing Co.	Berlin Falls, N. H.	6	3
Wilder & Co.	Ashland, N. H.	1	..

HOUSES.	CITY AND STATE.	SCREENS.	ORDERS
Umbagog Pulp Co.	Livermore Falls, Me.	2	..
Bangor Paper Co.	Bangor, Me.	4	..
Jay Paper Co.	Jay, Me.	1	..
White & Wells.	Waterbury, Conn.	2	2
St. Cloud Paper Co.	St. Cloud, Minn.	1	..
Columbia Paper Co.	Buena Vista, Va.	2	..
Anderson Paper Co.	Anderson, Ind.	3	2
Kaukauna Paper Co.	Kaukauna, Wis.	1	..
Willamette Pulp and Paper Co.	Oregon City, Ore.	9	4
California Paper Co.	Agnews, Cal.	1	..
Tennessee Pulp Co.	Memphis, Tenn.	1	..
Estate of Richard Carter	Glendale, N. Y.	1	..
Charles Wackerhagen	Canaan Four Corners, N. Y.	1	..
Smeallie, Phillips & Co.	Amsterdam, N. Y.	1	..
O. E. Martin	Norwood, N. Y.	1	..
Jefferson Paper Co.	Black River, N. Y.	2	2
St. Lawrence Paper Co.	Dexter, N. Y.	3	3
Payne & Blinn	Chatham, N. Y.	1	..
M. M. Pillsbury	Napanoch, N. Y.	1	..
Victoria Paper Co.	Fulton, N. Y.	2	2
Philip McGuire	Forestport, N. Y.	1	..
Hartland Paper Co.	Middleport, N. Y.	1	..
Standard Pulp Co.	Jennie's Falls, N. Y.	3	..
Bacon Paper Co.	Lawrence, Mass.	1	..
Watertown Paper Co.	Watertown, N. Y.	3	3
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Hollingsworth & Whitney	Winslow, Me.	3	3
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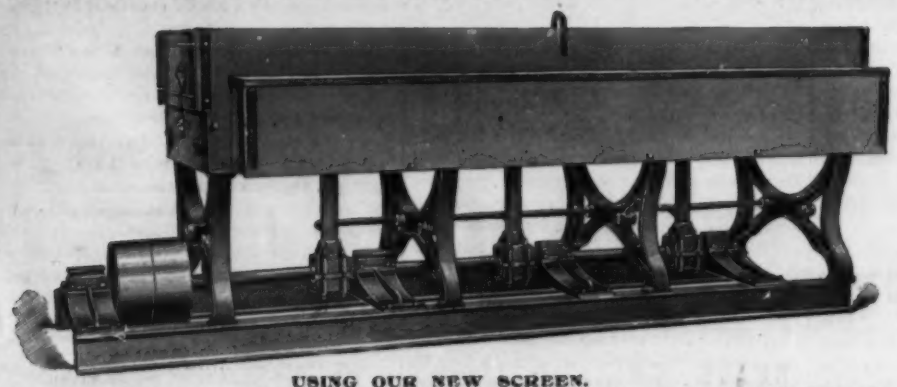

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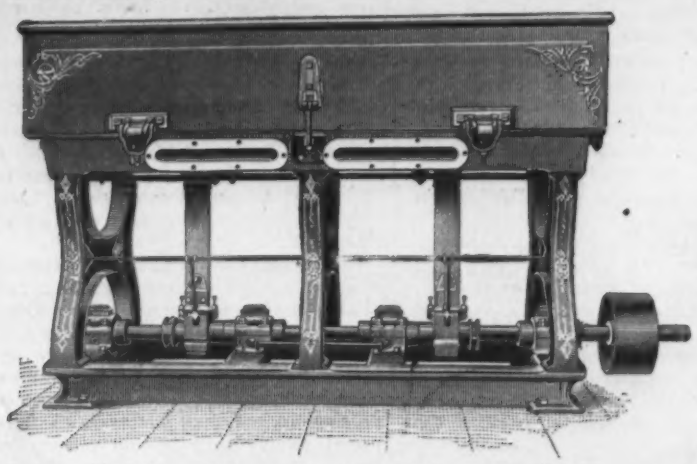

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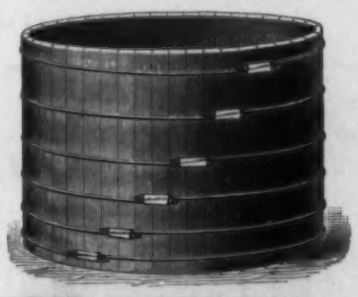

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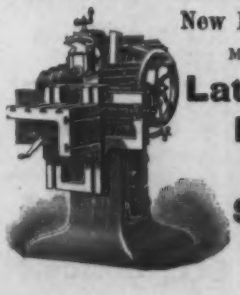

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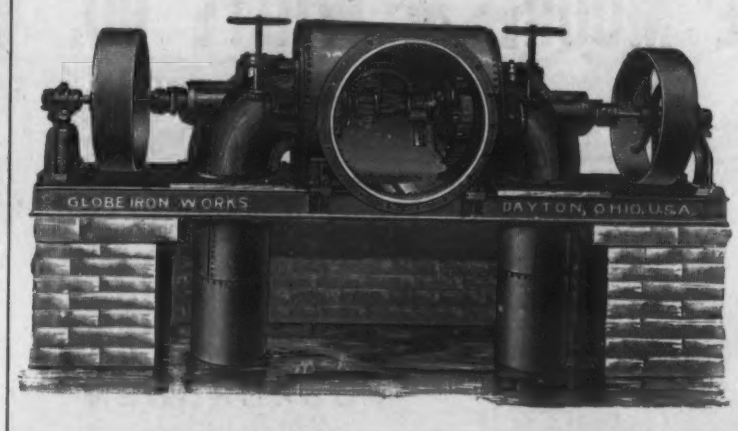

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The originals of these certificates and tests of other sized wheels can be seen at our office.

TEST OF A 45 INCH WHEEL—JULY 9, 1894.

	Head.	Rev. per Min.	Cu. Ft. per S.c.	Horse Power.	Per Cent.
Whole Gate,	16.06	119.17	141.58	205.27	79.76
¾ "	16.42	122.00	127.18	195.19	82.58
½ "	16.78	117.33	112.60	175.74	82.18
¼ "	17.02	111.33	98.12	149.99	79.31
⅛ "	16.88	118.67	82.07	118.40	75.52

TEST OF A 42 INCH WHEEL—JULY 14, 1894.

	Head.	Rev. per Min.	Cu. Ft. per Sec.	Horse Power.	Per Cent.
Whole Gate,	16.33	128.00	134.18	199.56	80.50
¾ "	16.56	134.80	120.85	188.14	83.09
½ "	16.59	129.33	104.55	162.89	82.77
¼ "	17.13	125.25	92.76	142.40	79.21
⅛ "	17.48	121.00	70.80	98.85	70.60

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APPLETON MACHINE COMPANY,
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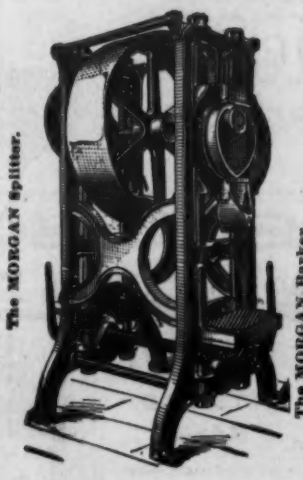
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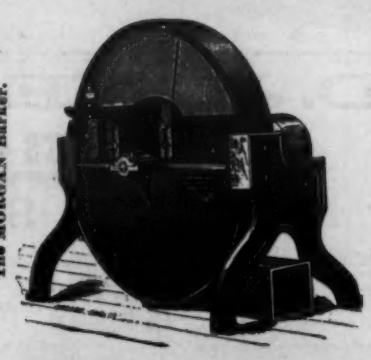
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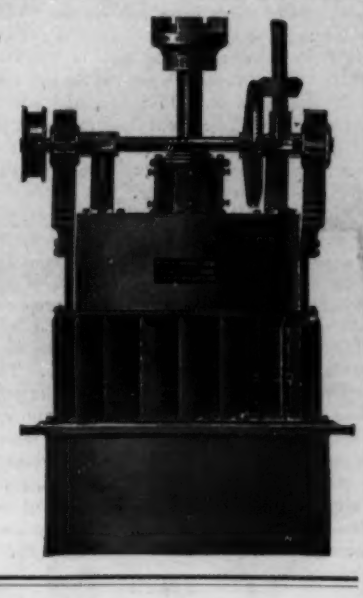

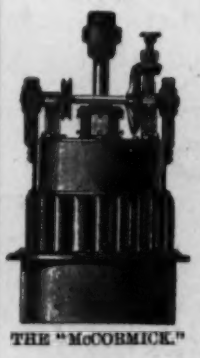
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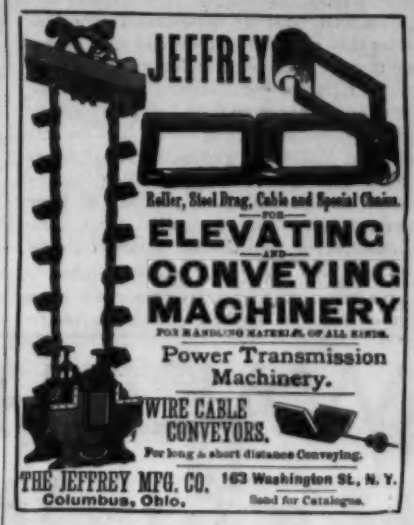
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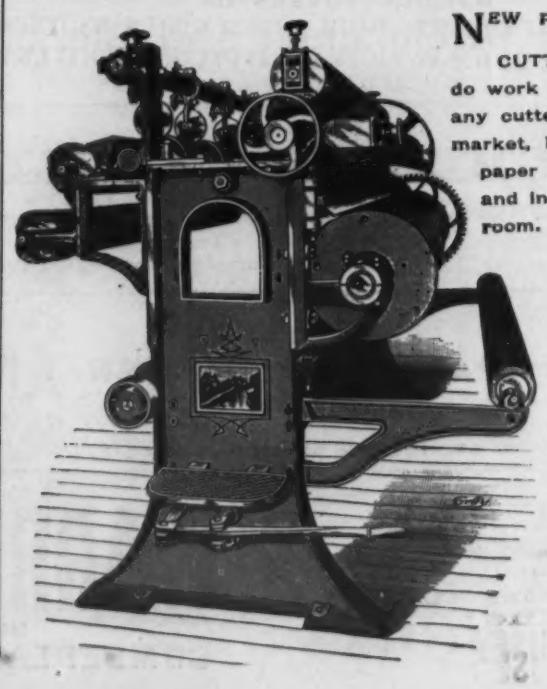

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A Petition to Congress.

The American Bankers' Association will petition Congress to adopt the following amendments to the National Banking act:

Section 1. The provision of the National Banking act requiring the deposit of bonds to secure circulating notes hereafter issued shall be repealed.

Sec. 2. Allow the banks to issue circulating notes to the amount of 50 per centum of their paid up, unimpaired capital, subject to a tax of one-half of 1 per centum per annum upon the average amount of circulation outstanding for the year, and an additional circulation of 25 per centum of their paid up, unimpaired capital, subject both to the tax of one-half of 1 per centum per annum and to an additional heavy tax per annum upon the average amount of such circulation outstanding for the year, said additional 25 per centum to be known as "emergency circulation."

Sec. 3 The tax of one-half of 1 per centum per annum upon the average amount of circulation outstanding shall be paid to the Treasurer of the United States as a means of revenue out of which the expenses of the office of the Comptroller of the Currency, the printing of circulating notes, &c., shall be defrayed. The excess over one-half of 1 per centum of the tax imposed upon the "emergency circulation" shall be paid into the "guarantee fund" referred to in section 6.

Sec. 4. The banks issuing circulation shall deposit and maintain with the Treasurer of the United States a "redemption fund" equal to 5 per centum of their average outstanding circulation, as provided for under the existing law.

Sec. 5. The redemption of the notes of all banks, solvent or insolvent, to be made, as provided for by the existing law.

Sec. 6. Creating a "guarantee fund" through the deposit by each bank of 2 per centum upon the amount of circulation received the first year. Thereafter impose a tax of one-half of 1 per centum upon the average amount of outstanding circulation, the same to be paid into this fund until it shall equal 5 per centum of the entire circulation outstanding, when the collection of such tax shall be suspended, to be resumed whenever the Comptroller of the Currency shall deem it necessary. The notes of insolvent banks shall be redeemed by the Treasurer of the United States, out of the guarantee fund, if it shall be sufficient, and if not sufficient, then out of any money in the Treasury, the same to be reimbursed to the Treasury out of the "guarantee fund" when replenished either from the assets of the failed banks or from the tax aforesaid.

National banking associations organized after this plan shall have gone into operation may receive circulation from the Comptroller of the Currency upon paying into the "guarantee fund" a sum bearing the ratio to the circulation applied for and allowed that the "guarantee fund" bears to the total circulation outstanding, and to be subject to the tax of one-half of 1 per centum per annum, as called for by the Treasurer of the United States for the creation and maintenance of this fund.

No association or individual shall have any claim upon any part of the money in said "guarantee fund," except for the redemption of the circulating notes of any insolvent national banking association. Any surplus or residue of said "guarantee fund" which may be hereafter ascertained or determined by law shall inure to the benefit of the United States.

Sec. 7. The Government shall have a prior lien upon the assets of each failed bank and upon the liability of shareholders, for the purpose of restoring the amount withdrawn from the "guarantee fund" for the redemption of its circulation, not to exceed, however, the amount of the failed bank's circulation after deducting the sum to its credit in the "redemption fund" (Section 4) already in the hands of the Treasurer of the United States.

Sec. 8. Circulation can be retired by a bank at any time upon depositing with the treasurer of the United States lawful money in amount equal to the sum desired to be withdrawn, and immediately upon such deposit the tax indicated in Sections 2, 3 and 6 shall cease upon the circulation so retired.

Sec. 9. In the event of the winding up of the business of a bank by reason of insolvency, or otherwise, the Treasurer of the United States, with the concurrence of the Comptroller of the Currency, may, on the application of the directors, or of the liquidator, receiver, assignee or other proper official, and upon being satisfied that proper arrangements have been made for the payment of the notes of the bank and any tax due thereon, pay over to such directors, liquidator, receiver, assignee or other proper official the amount at the credit of the bank in the "redemption fund" indicated in Section 4.

Harnessing the Ocean.

A stupendous scheme has recently been seriously suggested for the utilization in British waters of the energy of ocean currents for the purpose of distribution of power and light by means of electricity to centres of population at distances up to hundreds of miles from the source. This is nothing less than the proposition to dam the Irish channel at the Mull of Cantire, where the distance between the Scotch and Irish shores is only 15 miles, and where the energy of the current from the north is, so far as human requirements go, infinite—that is, would have to be expressed in scores of millions of horse power.

That this proposition is being regarded with some degree of seriousness may be gathered from the fact that a series of hydrographic surveys of the bottom of the channel has been made and charts prepared of the coasts and of the highlands on both sides from which materials might be conveniently got for building the dam. The report of an engineer detailed for the purpose is to the effect that there are no engineering difficulties in the way; by which is meant that, given the means to proceed, it is a possible thing to do, and is, compared, for instance, with the erection of the Brooklyn Bridge, a piece of work requiring merely enough brute force.—*Popular Science Monthly.*

The cost of water power in Switzerland transmitted 3½ miles by electricity is reported to be as follows: For a plant of 50 horse power, $58.50; 500 horse power $25.72.

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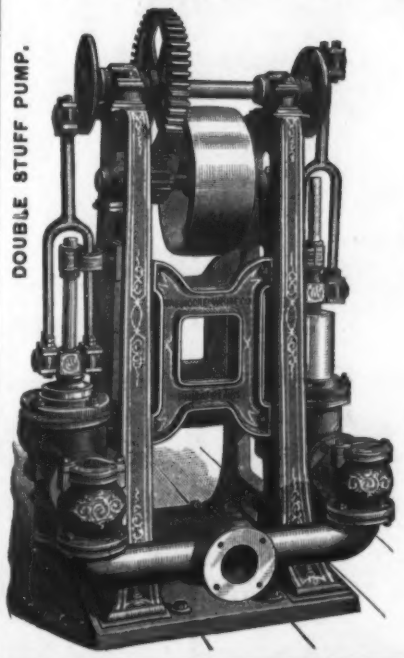

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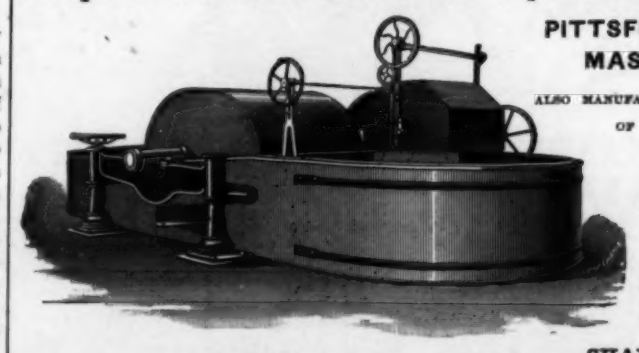

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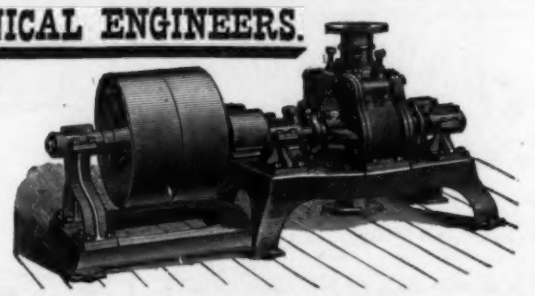

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Paper Mill Designations.

Following is a continued list of named paper mills in America. In order to secure the post office address—which in many cases is more or less remote from the mill itself—and other particulars, reference to LOCKWOOD'S DIRECTORY OF THE PAPER, STATIONERY AND ALLIED TRADES is indispensable.

Paper Mills in Operation.

UNITED STATES.

Glenmount Mill—John T. Ensor, Freeland, Md.
Globe Mills—Kimberly & Clark Co., Neenah, Wis.
Golden Paper Mills—Wells & Peppard, Golden, Col.
Gold Leaf Mill—R. T. Smart, Troy, N. Y.
Government Mill—Crane & Co., Dalton, Mass.
Great Spring Mill—Thomas T. Pool, New Hope, Pa.
Greenwood Mill—Benton Bros., Lee, Mass.
Greylock Paper Mills—L. L. Brown Paper Co., Adams, Mass.
Groton Mill—Tileston & Hollingsworth Co., Groton Centre, Mass.
Grove Mills—Adams & Bishop Co., New Windsor, N. Y.
Gunpowder Mill—Gunpowder Paper Co., Hoffmanville, Md.
Hadley Mill—George West, Hadley, N. Y.
Hampton Mill—Diamond Mills Paper Co., New Hampton, N. Y.
Hanover Mills—McEwan Bros. Co., Whippany, N. J.
Hardwick Mill—Geo. W. Wheelwright Paper Co., Wheelwright, Mass.
Hawkeye Paper Mill—Hawkeye Paper Co., Tama, Ia.
Highland Mills—Case Bros., South Manchester, Conn.
Highland Paper Mills—James A. Townsend, Newburgh, N. Y.
Hinsdale Mill—C. A. Robertson & Co., Hinsdale, N. H.
Hollywell Paper Mill—William Heyser, Chambersburg, Pa.
Hollywood Mills—Columbian Paper Co., Richmond, Va.
Homestead Mills—Thos. S. Marshall & Sons, 2½ miles south of Kennett Square, Pa.
Hoosic Mill—Cornwell & Bro., Ann Arbor, Mich.
Housatonic Mill—Eaton, Dikeman & Co., Lee, Mass.
Hughesville Mill—Warren Mfg. Co., Riegelsville, N. J.
Huntington Paper Mill—Koons Bros., Huntington Mills, Pa.
Island Mill—George West, Ballston Spa, N. Y.
Island Mill—Taggarts Paper Co., Felt's Mills, N. Y.
Ithaca Falls Paper Mills—Enz & Miller, Ithaca, N. Y.
James River Mills—Richmond Paper Mfg. Co., Richmond, Va.
James River Paper Mills—W. P. Husband, lessee, Big Island, Va.
Japanese Mills—Crane Bros., Westfield, Mass.
Joliet Mill—Central Carpet Lining Co., lessee, Joliet, Ill.
Jordan Mill—Geo. Putnam, Jordan, N. Y.
Kamargo Mills—Knowlton Bros., Watertown, N. Y.
Kankakee Paper Mill — American Straw Board Co., Kankakee, Ill.
Kansas City Paper Mill—Kansas City Paper Milling Co., Kansas City, Mo.
Kearsarge Mill—American Straw Board Co., Davisville, N. H.
Kenyon Mill—Kenyon Paper Co., Baldwinsville, N. Y.
Keuka Mill—Fox & Curtis, Penn Yan, N.Y.
Keystone Paper Mill—C. S. Garrett & Son, Upper Darby, Pa.
Kokomo Paper Mill—Kokomo Paper Co., Kokomo, Ind.
Lake George Paper Mill—Lake George Paper Co., Ticonderoga, N. Y.
Lakeside Mill—Lakeside Paper Co., Maumee, Ohio.
Lamville Mill—National Fibre Board Co., Morrisville, Vt.
Lancaster Paper Mill—Amadon, Cauger & Co., Lancaster, N. H.
Leominster Mill — Geo. W. Wheelwright Paper Co., North Leominster, Mass.
Lewis Straw Board Mill—F. R. Lewis, Flint, Mich.
Lick Mill—Lick Paper Co., Agnews, Cal.
Lincoln Mills—Fox River Paper Co., Appleton, Wis.
Linenoid Mills—Crane Brothers, Westfield, Mass.
Little Androscoggin Mill—National Fibre Board Co., East Poland, Me.
Loama Moor Mills—James H. Brant, Morristown, N. J.
Lock Haven Mills—New York and Pennsylvania Co., Lock Haven, Pa.
Lockland Mills—Haldeman Paper Co., Lockland, Ohio.
Logansport Paper Mill—Columbia Straw Paper Co., Logansport, Ind.
Lower Mill—Mount Holly Paper Co., Mount Holly Springs, Pa.
Loyalhanna Mill—James Peters & Co., Latrobe, Pa.
Lyndon Paper Mill—Columbia Straw Paper Co., Lyndon, Ill.
Lyons Mill—Columbia Straw Paper Co., Lyons, Ia.
Mad River Mills—Columbia Straw Paper Co., Dayton, Ohio.
Malapardis Paper Mills—McEwan, Downs & Co., Whippany, N. J.
Malden Bridge Mill—Malden Bridge Paper Co., Malden Bridge, N. Y.
Manchester Paper Mill—Manchester Paper Twine Co., Richmond, Va.
Manhattan Felt Mills—New Mfg. Co., New York city.
Maplewood Mills—Haldeman Paper Co., Lockland, Ohio.
Marcellus Mill—Isaac N. Sherman, Marcellus Falls, N. Y.
Marley Mill—C. S. Garrett & Son, Childs, Md.
Mattapan Mill—Tileston & Hollingsworth Co., Milton, Mass.
Maumee Paper Mill—Maumee Paper Co., Maumee, Ohio.
McDowell Paper Mills—McDowell Paper Mills, East Manayunk, Pa.
Meridian Mill—Indiana Paper Co., Mishawaka, Ind.
Merion Board Mills—Thos. D. Abraham, Abrams, Pa.
Merrimac Leather Board Mills—National Fibre Board Co., South Lawrence, Mass.
Miami Mill—Beckett Paper Co., Hamilton, Ohio,
Middleport Paper Mill—Hartland Paper Co., Middleport, N. Y.
Middletown Mills—The W. B. Oglesby Paper Co., Middletown, Ohio.
Milburn Mill—Diamond Mills Paper Co., Milburn, N. J.
Mill Grove Mill—Bloomsburg Paper Co., Bloomsburg, Pa.
Milltown Mills—J. Edgar Meeker, Springfield, N. J.
Milo Paper Mills—John T. Andrews, Penn Yan, N. Y.
Mineral Spring Mill—Lewis Burke, Coatesville, Pa.
Mohawk and Hudson Paper Mill—Frank Gilbert, Waterford, N. Y.
Monadnock Mill—W. T. Barker & Co., Bennington, N. H.
Montgomery Paper Mill — Fernando R. Walker & Son, Montgomery, N. Y.
Montville Mill—C. M. Robertson, Montville, Conn.
Moose River Paper Mill—Moose River Paper Co., Lyons Falls, N. Y.
Morley Mill—Eaton, May & Robbins Co., Lee, Mass.
Morris Mill—Allen Paper Car Wheel Co., Morris, Ill.
Mountain Spring Paper Mill—Wm. H. Gandey, Lambertville, N. J.
Mount Ida Mill — Manning & Peckham, Troy, N. Y.
Mount Vernon Mill—Wingate & Cummings, Mount Vernon, Pa.
Mt. Tom Mill—Parsons Paper Co., Holyoke, Mass.
Mt. Vernon Mill—Orrs & Co., Troy, N. Y.
Muir's Mills—Josiah F. Muir, Morristown, N. J.
Munroe Mill—Cleveland Paper Co., Munroe Falls, Ohio.
Musconetcong Mill—John L. Riegel & Son, Riegelsville, N. J.

(To be continued.)

Economy of Driving Mills and Factories by Electricity.

A correspondent in a recent issue of *Indian Engineering* calls attention to the interest which exists in the use of electricity for driving individual machines of large factories, and states that the day is not far distant when electricity will become a successful rival of the old-fashioned manner of distributing power by shafting, gearing, cotton ropes and leather belting. The great losses that occur and are unavoidably present in the last named systems are so important that it becomes a matter of serious interest to those concerned to take note of the constantly increasing application of electricity to such purposes, the use of which tends so materially to diminish the working expenses.

Such extremely satisfactory results have attended electrical driving in England and on the Continent that doubtless many changes to this method of transmission of power will soon be made elsewhere.

One great inherent advantage in using electricity is that the distributing agent—viz., the cables—conveys the power practically without loss, and only in strict proportion to the demand, while in the case of mechanical transmission by shafting, &c., the loss by friction is considerable, being practically a constant quantity, whether full, partial or light work is being done—in many cases amounting to from 20 to 40 per cent. of the power available. The longer the distance of transmission, and the less the load, the greater is the proportion of loss, and in many cases this becomes a most important matter. Moreover, there is always a considerable dead weight to be rotated, the total shafting, gearing and pulleys, weighing in some cases hundreds of tons, entailing extra strength and cost in structural arrangements to withstand the strain.

From the intermittent character of the work carried out in factories and workshops, it is well known that frequently only a small part of the power produced by the engine is actually converted into useful work at the machines. In the present systems of mechanical driving a single accident to the main driving belt, shaft or gears brings the whole establishment to rest; to obviate this is one of the chief advantages of electric transmission. A further objection to the old system is the almost insurmountable difficulties of economical extension; for instance, to increase a 500 horse power plant to one of, say, 700 horse power or 800 horse power, would need an almost complete substitution of new and heavier shafting, &c., and great increase in the dead load on the structure generally, while with an electrical installation little or no radical alteration is required.

In the advocated new system of driving outside the engines or prime movers (which are neglected as being common to both systems), all the shaftings, gears, belts, bearings, &c., are replaced by simple fixed conductors of very small weight and by separate motors to each machine or tool; where, however, the power required does not warrant this, a separate motor is used to drive a group of machines from a short line of light shafting. These shafts or groups of machines can be placed in any position found most convenient for working, regardless of their neighbor.

The nature of electrical generation and dynamo working is such that only sufficient amount of current required to do the work in is used, so its economy is at once obvious. In factories where the machinery is working intermittingly and liable to great fluc-

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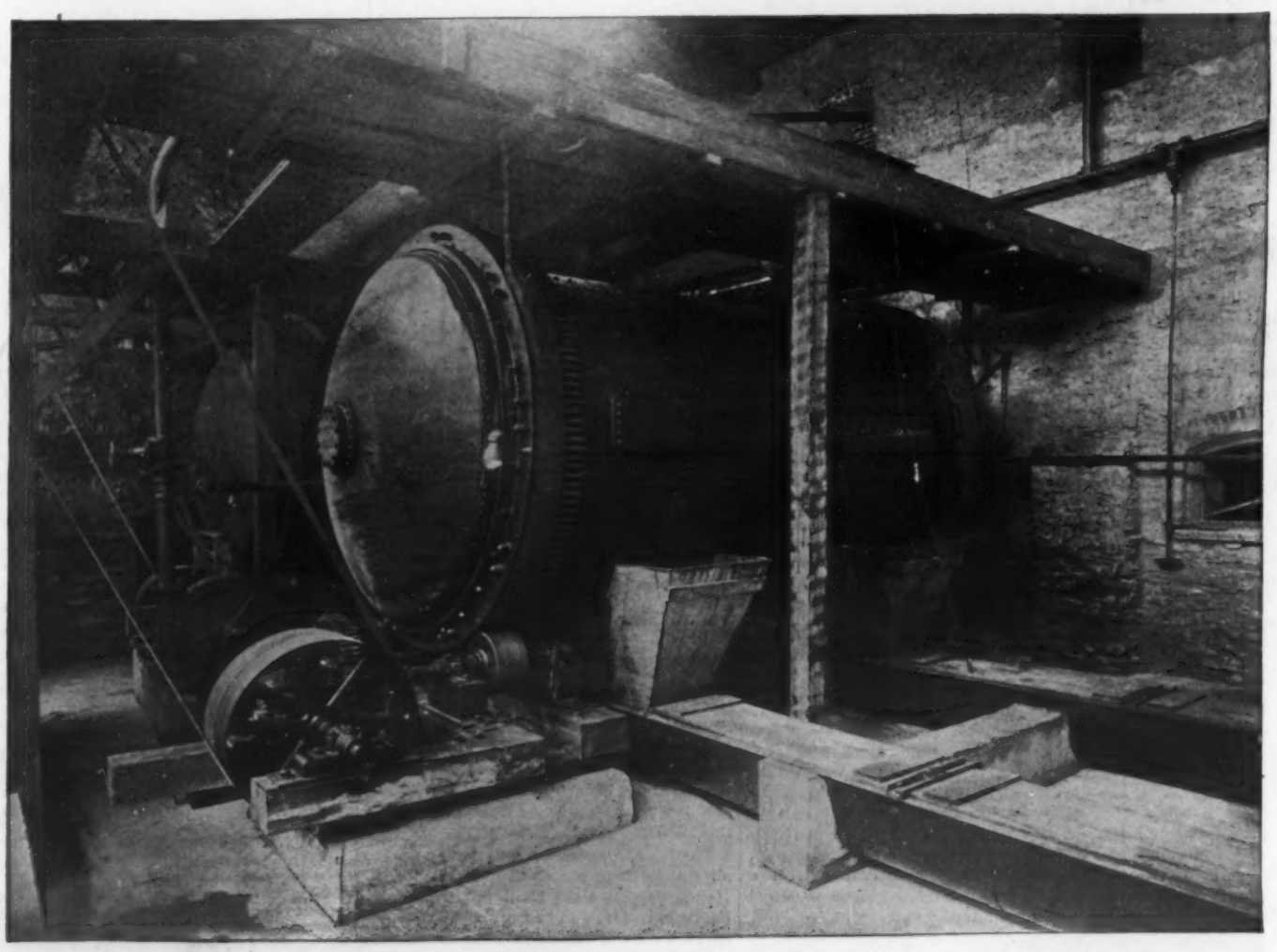

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tuation, the economy of working is even more marked, as the electric current can be switched on or off with the greatest ease and rapidity, after which crossed belts and fast and loose pulleys appear a heavy and clumsy, not to say unscientific, method of utilizing power.

In electrical transmission 80 per cent. of the power generated by the engine is usefully employed in the machines, and where each machine can have its own motor a unique and highly economical method of using power is obtained. It is hardly necessary to point out that no hard or fast law can be laid down; each case must be individually considered and that system adopted which gives the best results. For old and existing works probably the cost of conversion would seldom be warranted, but for new factories or renovations, without doubt, the question of driving should be most seriously considered.

In these days of fierce competition, and when profits are reduced to their lowest ebb, the careful study of every possible means of economical working is of vital importance to the manufacturers. The use of electricity for driving all kinds of hoisting machinery is extremely satisfactory and more economical; it is easily and instantly controlled, and allows the driver to concentrate the whole of his attention to the work being handled. For heavy machinery, such as exists in sugar works, electric driving would, without doubt, be very advantageous in effecting economy and give great convenience in working, and the facility with which electric lighting could be adopted is also an incidental but important advantage to be derived from its use.

Lastly, this system for motive power purposes lends itself most admirably to the subdivision of the motive power engines and dynamos into several units, the consequence being that by this multiplication the chances of total or even serious breakdowns are rendered impossible. Before concluding, we should mention that where factories and mills, &c., are within a reasonable distance—say 10 miles—of waterfalls, reservoirs or mountain streams, when water can be relied upon, the motive power could be obtained from them with advantage by generating current at the site and distributing it to the works by the high tension system.

Estimation of Sulphur in Pyrites.

By Thomas S. Gladding.

There are two recognized methods for the estimation of sulphur in pyrites which, with various modifications, are chiefly used by commercial chemists at the present time. These are:

1. The fusion of ore with a mixture of sodium carbonate and potassium nitrate, solution in water, filtration from iron hydroxide, and precipitation as barium sulphate.

2. The solution of the pyrites ore in aqua regia, or in aqua regia and bromine, and subsequent precipitation as barium sulphate.

The following investigation was undertaken to determine the relative merits of these two methods and the proper modification to be observed:

A chemically pure potassium sulphate was examined for impurities with negative results. 2.7 grams containing about the amount of sulphur found in one gram of high grade pyrites were dissolved in 300 cc. to 400 cc. water, five cc. concentrated hydrochloric acid added, and a 10 per cent. barium chloride solution added, at the rate of one drop per second, to the boiling solution. We obtained after standing overnight:

	Gram.
Sulphur	0.4960
"	0.4960

Theory requires sulphur 0.4965. This amount of 0.496 gram was taken as the quantity of sulphur contained in 2.7 grams of the potassium sulphate, and the following series of experiments made exactly as above, with the stated additions and modifications. We first investigated the various conditions of the fusion methods.

Series 1. With additions of five cc., nitric acid:

	Gram.
Sulphur found	0.5007
" "	0.5007
" "	0.5020

The presence of nitric acid produces result too high, from the dragging down of nitrate salts, probably barium nitrate.

Series 2. With addition of 17 grams potassium nitrate:

	Gram.
Sulphur found	0.5066
" "	0.5102

Series 3. With addition of 15 grams of fusion of mixture, viz., sodium carbonate and potassium nitrate, and addition of hydrochloric acid to neutrality and five cc. in excess:

	Gram.
Sulphur found	0.5005

Series 4. With addition of potassium chloride, 6.5 grams, sodium chloride, 7 grams:

	Gram.
Sulphur found	0.4955
" "	0.4950
" "	0.4966

No appreciable error either way.

The above series of experiments show that no nitric acid nor nitrates should be present in the solution at the time of precipitation. Series 4 shows that when all nitric acid is expelled then sodium chloride and potassium chloride in solution will not cause error. We have found, however, that the complete expulsion of all nitric acid is a very difficult and tedious operation, requiring repeated evaporations to dryness with excess of hydrochloric acid.

The practical difficulty of removing all the nitric acid, and time and labor required, are serious objections to this method.

The following experiments were made to investigate the conditions of the second or aqua regia method.

Series 5. With addition of two grams of citric acid:

	Gram.
Sulphur found	0.4960
" "	0.4960

This shows that the citric acid, which is frequently used to keep up any iron present, does not exert a solvent action.

Series 6. With addition of 2 grams citric acid and 0.500 gram iron, which is about the amount of iron in 1 gram of pyrites ore:

	Gram.	Gram.
Sulphur found	0.4934	0.4937
" "	0.4937	0.4933
" "	0.4940	0.4937
" "	0.4938	

This shows that the presence of iron causes low results.

The above results were obtained by ignition of the barium sulphate precipitate at a low red-heat until the filter paper was thoroughly burned. The precipitates was of a buff color.

On exposing the precipitates to a strong blast for several minutes longer, they assumed a decided red color and lost weight. The results were found to be:

	Gram.
Sulphur found	0.4910
" "	0.4913
" "	0.4900

We attribute these erroneous results to the unavoidable dragging down of iron salts (probably iron sulphate) with the barium sulphate, and in place of an equivalent amount of barium sulphate. On ignition, this iron sulphate is decomposed, the sulphuric anhydride is expelled, causing low results, and the remaining iron oxide coloring the residue.

This was corroborated by taking 2.7 grams potassium sulphate, precipitating as above, drying the precipitate, brushing from the paper, drying at about 300° C., and adding the ash of the filter paper, which had been burned in a separate dish.

	Gram.
Sulphur found	0.4961

On heating over the blast lamp for five minutes we found:

	Gram.
Sulphur	0.4880

It is evident that the presence of iron in the solution is incompatible with accurate results.

We next tried the method of Lunge and Hurter. They precipitate the iron with ammonia and throw down the barium sulphate in the filtrate.

Series 7. With addition of 0.5000 gram iron, precipitation of same with ammonia, and precipitation of barium sulphate in the filtrate:

	Gram.
Sulphur found	0.4944
" "	0.4935

These results were too low. On redissolving the ferric hydroxide (on filter paper) with hydrochloric acid, and adding barium chloride to the filtrate, and standing overnight, we obtained a precipitate of barium sulphate, giving:

	Gram.
1. Sulphur	0.0020
2. "	0.0021

Adding these amounts we obtained:

	Gram.
Sulphur	0.4964
"	0.4956

The most careful washing failed to wash out all sulphur from the ferric hydroxide, and this solution in hydrochloric acid, and the separate recovery of sulphur contained therein, was found necessary.

These results were the most satisfactory yet obtained. The precipitate of barium sulphate was pure white, pulverulent and did not lose appreciable weight on prolonged heating over the blast lamp. In this respect it differs from all precipitates hitherto obtained, demonstrates its far greater purity, and gives us a fixed and final result.

A method recently published instructs as follows: To the solution (about 200 cc.), heated on a steam bath and containing 20 cc. free hydrochloric acid, add barium chloride solution from a burette, drop by drop, stirring briskly. Add 35 cc. and allow the solution to stand one hour on the steam bath, filter through ten cm. paper and wash three times with hot water. Ignite and weigh barium sulphate. After calculating per cent. sulphur, add 0.20 per cent. to the result for solubility of barium sulphate in the acidified form.

We tested this method, using 2.70 grams potassium sulphate, 200 cc. water, 20 cc. hydrochloric acid, and 0.500 gram iron. We obtained:

	Gram.
Sulphur	0.4900
"	0.4898
"	0.4902
"	0.4894
"	0.4905

The average loss was found to be about 0.60 per cent. instead of 0.20 per cent. as stated. The color of the precipitate was light buff. On heating over the blast lamp for five minutes the precipitate assumed a darker color and lost 0.021 gram in weight, so that the percentage of sulphur was reduced about 0.30 per cent. more. Evidently this method does not produce a pure precipitate of barium sulphate.

The following series of comparative analyses on samples of pyrites received for assay corroborates the above results. The results given under "Fusion Method" were obtained without evaporating to dryness to expel all nitric acid. The results given under "Bromine Method, No. 1," were obtained by solution in nitric acid and bromine, evaporation to dryness with hydrochloric acid, taking up with hot water plus hydrochloric acid, addition of 2 grams citric acid and precipitation without removing the iron.

In "Bromine Method, No. 2," the iron was removed with ammonia and the barium sulphate precipitated in the filtrate. The ferric hydrochloric was dissolved in dilute hydrochloric acid in a separate beaker, heated to boiling, barium chloride added, allowed to stand overnight, and the small amount of barium sulphate thus obtained added to the main precipitate:

Samples.	Fusion Method.	Bromine Method No. 1.	Bromine Method No. 2.
1	52.50	51.45	51.71
1	52.34	51.30	51.73
1	52.60	51.45	51.71
1	....	51.34	51.71
1	....	51.32	51.68
1	....	....	51.78
2	40.92	....	40.50
3	39.90	39.25	39.60
4	40.90	39.72	40.00
5	41.25	40.05	40.40
6	41.80	40.90	41.10
7	40.59	39.71	....
8	42.54	41.94	....
9	41.44	40.40	....

We see from the above that the "Fusion Method," without expulsion of all nitric acid, gives results altogether too high, as was to have been expected.

The "Bromine Method," when iron is not removed, gives results too low by 0.20 per cent. to 0.35 per cent. This is in exact agreement with the previous work on pure potassium sulphate. No accurate allowance can be made on this method, as the error will vary with the amount of heat applied in igniting the precipitate of barium sulphate.

In the "Bromine Method No. 2" the precipitated iron hydroxide was dissolved in every case, and an additional amount of sulphur, varying from 0.20 per cent. to 0.30 per cent., was obtained.

The insolubility of barium sulphate in the solution of ferric chloride thus obtained was demonstrated by dissolving 0.027 gram potassium sulphate in 50 cc. water, adding 5 cc. hydrochloric acid and 0.5 gram iron, precipitating hot and allowing to stand overnight. We found:

1. Sulphur	gram 0.0039
2. "	0.0050
3. "	0.0051

The amount actually present was 0.00496 gram.

As a result of the above investigation and of many comparative analyses of pyrites ores extending over several years, we have adopted the following method of assaying pyrites:

1. Grind the ore to an impalpable powder, dry at 100° C., and keep in well-corked bottles. Ten to fifteen minutes drying is sufficient.

2. Weigh 1 gram, introduce into beaker, cover with watch glass, and add 10 cc. bromine solution, mix by rotating beaker and allow to stand ten minutes in the cold. Add 10 cc. nitric acid, mix as before, and allow to stand ten minutes longer in the cold. Finally place the beaker on a water bath, containing cold water, heat slowly to boiling, and when solution becomes quiet remove glass after rinsing and evaporate to dryness. Add 10 cc. hydrochloric acid, keeping the beaker covered with a glass, and when violent action ceases again remove the glass after rinsing and evaporate to dryness once more. Add 1 cc. concentrated hydrochloric acid and 50 cc. hot water, digest until solution is complete, filter and wash with hot water. The filtrate, about 100 cc., is now saturated with a slight excess of ammonia; allow to stand hot for ten minutes.

The precipitated ferric hydroxide is filtered and washed five or six times more on the paper with boiling hot water, the filtrate acidulated with hydrochloric acid in slight excess, heated to boiling, and 50 cc. barium chloride solution added, one drop per second to the boiling liquid. The solution is allowed to stand overnight, filtered, washed and ignited; the precipitate of ferric hydroxide is also dissolved in dilute hot hydrochloric acid heated to boiling, and 10 cc. barium chloride solution added. It is allowed to stand overnight, and the barium sulphate thus obtained added to the main precipitate. One filter paper can be used for the two precipitates.

The bromide solution is prepared by dissolving 75 grams potassium bromide in 50 cc. water, adding 50 cc. bromine, stirring and adding water to 500 cc. The bromine will nearly all dissolve. Another form of bromine solution used by some is made by saturating aqua regia with bromine. The first solution is the more certain, however, to oxidize all the ore without separation of any sulphur. The barium chloride is in the 10 per cent. solution.—*Journal American Chemical Society.*

Canada Pulp Wood.

A great question has been agitating the lumber and paper trades during the past two months, and that is, "Can the United States claim free pulp logs from Canada?" Or, in other words, can they by any process of reasoning claim that Canada would be wrong in imposing an export duty on pulp logs, considering the present state of the laws of both countries? As is well known, the pulp manufacturers of Canada desire an export duty on pulp logs, so long as the United States shall impose an export duty on pine, spruce, elm or other logs, or upon stave bolts, shingle wood or heading blocks; and therefore Canada would not have free access to the United States' sawed lumber market were she to impose a duty on pulp logs.

But there is here only a seeming danger. We submit that Canada could equitably impose an export duty on pulp logs and yet claim to be within the "privileged nation clause" on sawed lumber, as put forth by the United States Congress. Our reason is that by no manner of means can pulp logs cut into 4 foot lengths be considered as lumber logs. This regulation on the part of the United States was framed to secure from Canada free lumber logs, free stave bolts, shingle wood and heading blocks, but does not include pulp wood as it is usually exported to be ground up in American pulp mills.

True, the scheming politician could easily on the face of it claim that pulp wood is included. But those who know exactly what pulp logs look like, and the precise condition in which they are exported, will not be led away by any such specious argument. Canada would be perfectly safe in imposing an export duty on this kind of wood, basing her case on this argument.

Moreover, there is little danger of the United States raising a fuss over a matter which would occasion them to quibble in order to maintain their supposed privileges, because they want Canada's logs and lumber, and wants them badly. Deprived of them the prices of lumber in the United States would rise to an almost untouchable price, and hundreds of their mills would be closed down.

Considerable talk was indulged in quite recently, and it became an international matter, as to whether certain regulations of the Governments of Quebec and New Brunswick did not prevent Canada from taking advantage of the free entry privilege. The Quebec regulation is by the Crown Lands Department, and is as follows: "Whereas, the present rate of dues chargeable on spruce logs for paper pulp is 25 cents (twenty-five cents) per cord of 128 cubic feet, and whereas, it is advisable to raise it, while allowing a reduction when pulp is to be manufactured in this province—it is ordered that the rate of dues on spruce logs for paper pulp be fixed at forty cents (40c.) per cord of 120 cubic feet, but that a reduction of fifteen cents (15c.) per cord be allowed when the pulp wood is to be manufactured in this province."

The United States seem to think that Canada will, under their present tariff regulations, be forced to allow pulp logs (4 foot) to be exported without paying an export duty. They base their conviction on the fact that Canada desires to sell its sawed lumber in the United States; that the United States admit sawed lumber free except where any foreign country imposes an import duty on manufactured pulp, and this journal has in several articles upheld the justice of this claim.

The New Brunswick regulation applies to all timber logs cut on Crown land: "No spruce or pine trees shall be cut by any licensee, under any license, not even for piling, which will not make a log at least 18 feet long and 10 inches at the small, and if any such shall be cut the lumber shall be liable to double stumpage and the license be forfeited."

Now, as to these regulations, it may first be said that if the Quebec Crown lands rule is not sufficient to violate the rule promulgated by the United States Congress, then an export duty on wood to be manufactured into pulp will not. Nevertheless, the Quebec regulation is unconstitutional, and it is a matter of surprise that the Minister of Justice has not asked for its revocation. The regulation of trade and commerce, both international and interprovincial, belongs exclusively to the Dominion Government, and no Provincial Government has a right to promulgate such a regulation. It is one which discriminates against the other provinces, and as such is manifestly inconsistent with the spirit and letter of the constitution.

The New Brunswick regulation is general and is designed only to preserve the forests of that fair province—a most commendable object and one which Ontario and Quebec would do well to aim at more than they have in the past. Not only must they aim at it, but they must hit it.

In view of the foregoing considerations, we can see no reasons why we should recede from our former position in upholding the pulp manufacturers in their desire to have an export duty on pulp logs, so long as the United States impose an import duty on manufactured pulp.—*Canadian Printer and Publisher.*

A Paper Stock House.

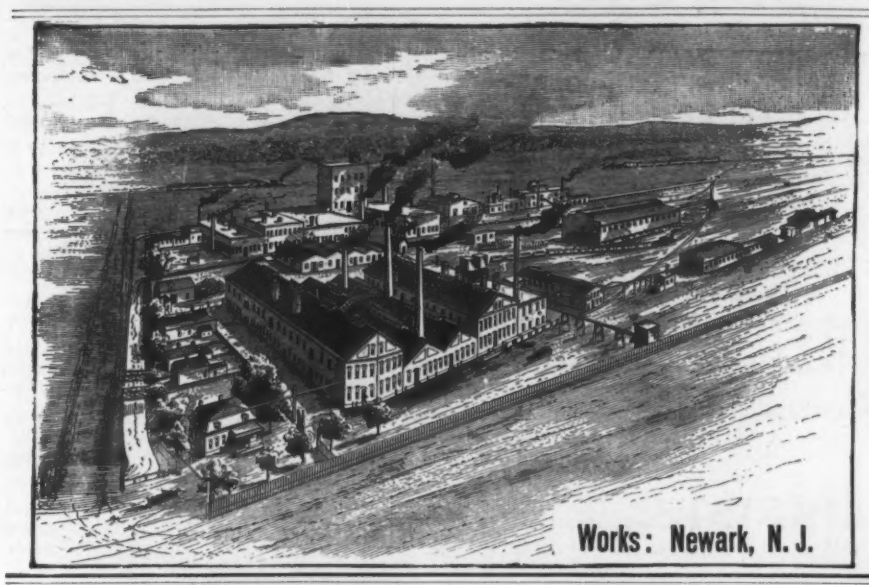
About twenty years ago William and Laurence Hughes engaged in trade together under the name of Hughes Brothers, and went into the business of packing paper stock at 62 North Second street, Brooklyn, E. D., N. Y. They began in a small way, first renting and afterward purchasing an old iron foundry for this purpose. They had a good business and prospered, but the building was inadequate to their needs and was not so well adapted to this use as they wished. They saw the need of a new warehouse put up specially for the purpose of packing paper stock, and which should combine all modern improvements for safety, strength and convenience.

Early last summer the old foundry was torn down, and with characteristic energy Hughes Brothers set to work to put up a new structure in its place. This has just been completed and the proprietors feel justified in claiming, after examining numerous buildings in different places erected for a similar purpose, that theirs is one of the best, if not the largest warehouse of the kind in the Eastern States. It has all of those improvements in construction and machinery which go to make up a perfect and a perfectly equipped establishment. This building is numbered 62, 64 and 66 North Second street; it is located near Wythe avenue and is conveniently situated to the water, is less than a half hour's ride from the New York City Hall and within three blocks of the Grand Street Ferry, Brooklyn; it is built of brick, six stories high, the walls being 2 feet thick on the lower floor and 16 inches on the upper stories. In addition there is a spacious cellar 11 feet deep. The property has a frontage of 75 feet on North Second street and is 70 feet in depth. The flooring is double and is what is called "mill flooring," made of Georgia pine covered with maple 7½ inches thick. The posts and girders are made of timbers 16 inches square.

The elevator is powerful and is capable of lifting six bales at a time, this being equal to a weight of 5 tons; it is run by steam, travels from the cellar to the roof, and is 9 feet square. The baling presses are also operated by steam power, and are capable of turning out fifty bales per day each. The roof is made of brick, and will be used for drying purposes; it is surmounted by a tower which is both useful and ornamental. The elevator runs to this tower in carrying stock to the roof, and the tower itself adds to the external appearance of the building. This warehouse is not connected with any other structure, and this serves to avert danger from fire on adjacent property. Numerous windows on each floor give the necessary light. Because of the substantial flooring insurance rates were much lowered, a fact which is worth noting. There is also an ample provision of fire escapes.

The offices are situated on the ground floor in the northeast portion of the building, and are neatly finished and furnished; they are large and roomy. Adjoining are toilet arrangements with the latest improvements. In fact, everything has been carefully planned and substantially built. The desiderata of safety from fire, strength and adaptability for the use to which it is to be put, seem to leave nothing to be desired in a construction of its character. That it meets all requirements for handling large quantities of stock with dispatch dealers in paper stock will readily see.

This business has grown to its present proportions through the unaided efforts and constant work of the Hughes Brothers, and no expense has been spared to make the structure complete in every particular.



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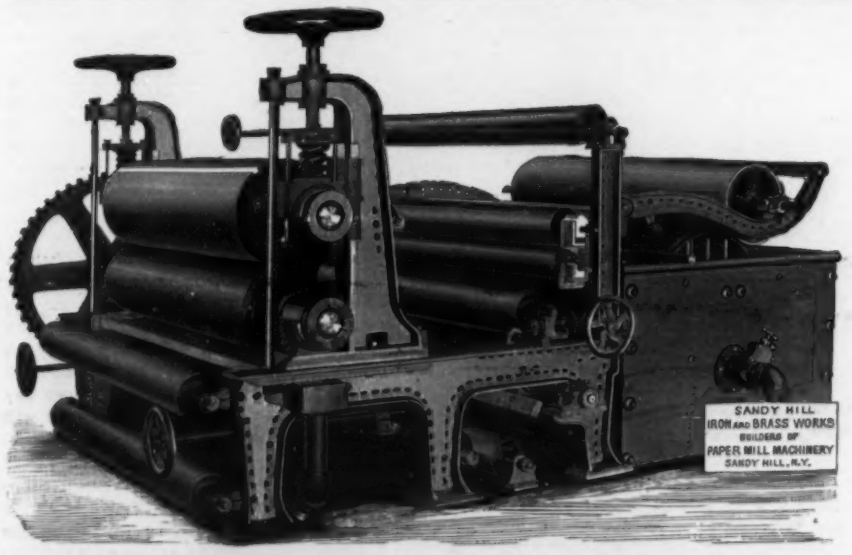

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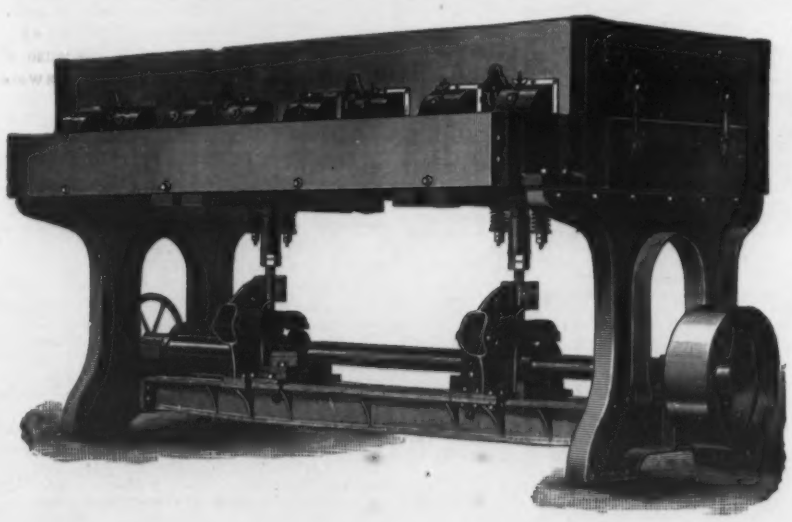

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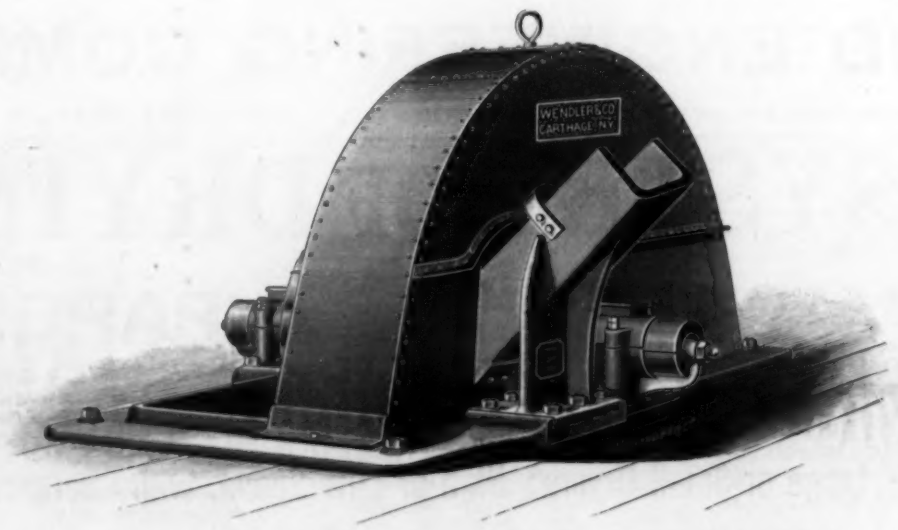

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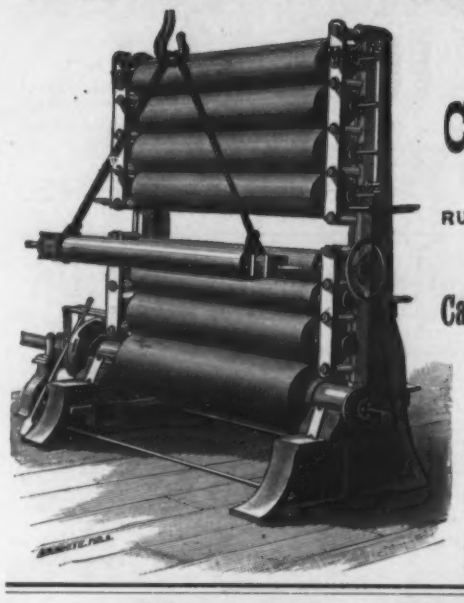

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As years passed it became *the* standard work, and for the past decade copies have sold at large prices, often as high as $30 each, and occasionally for more money. The original book consisted of 423 pages, 8¼ by 11 inches in size.

Mr. Hofmann returned to Germany more than eighteen years ago and settled in Berlin. He established *The Papier Zeitung*, and in due course, about seven years ago, began to write his second and latest Treatise. Thus far he has printed and published probably 1,200 pages in German, and in parts of forty-eight pages, including cover, profusely illustrated by wood cuts. When finished the book will consist of about 1,000 pages (pages size same as in first book), illustrated by 1,500 wood cuts.

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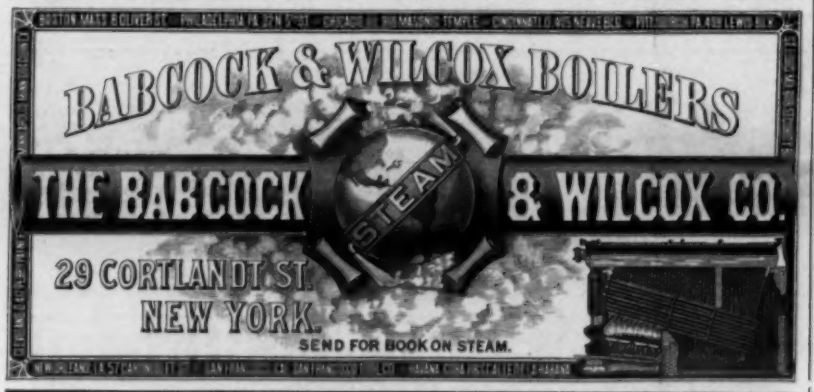

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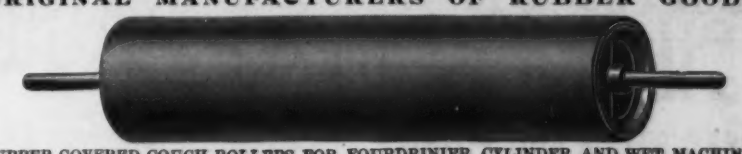

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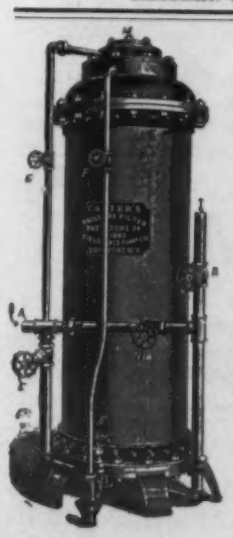

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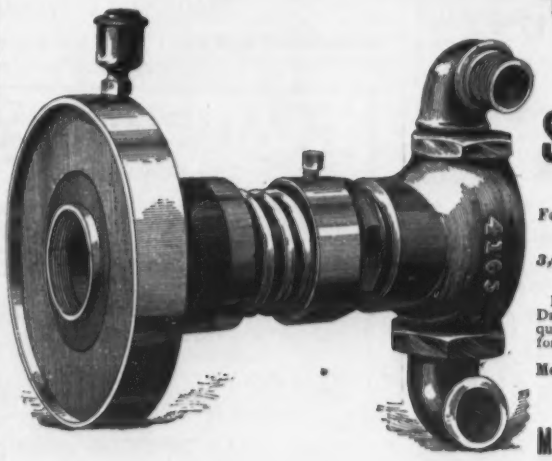

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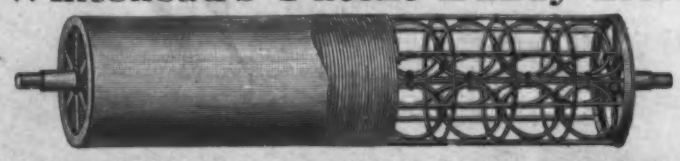

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